

APPENDICES

APPENDIX A

LETTERS DATED JULY 31, 1997
AND AUGUST 12, 1997

OxyChem[®]Responsible Care[®]
A Public Commitment 

31 July 1997

Ms. Donna McCartney (3HW90)
US EPA Region III
841 Chestnut Building
Philadelphia, PA 19107

☐ Date: _____
☒ File: Delaware City
☐ Fax to: _____
☐ FedEx: _____
☐ cc: 7462

RE: OxyChem's Proposed Corrective Action Approach
Delaware City Plant RCRA Corrective Action Program

Dear Ms. McCartney:

In recent correspondence between EPA and OxyChem, both parties have expressed concern for the direction of the RFI project at Delaware City. OxyChem too would like to move the project along and we are ready to implement the Phase II RFI with EPA approval. In response to Bob Greaves' call to OxyChem regarding the project, OxyChem has prepared this letter to introduce EPA to OxyChem's proposed project approach which we feel will help bring about resolution of the current concerns.

Our approach looks ahead to the Corrective Action component of the project as a means to evaluate the application of the existing Phase I and proposed Phase II data in selecting potential remedies. OxyChem's preferred corrective action is to contain each SWMU on site with downgradient ground water control as necessary. OxyChem believes it has or will have following Phase II, sufficient data to support this approach. A site conceptual model and a regional ground water flow model were also prepared to help in the development of this approach. With a remedy(s) in mind, the need for a baseline risk assessment as a decision making tool is no longer needed. Risk assessment will be conducted however, for offsite ecological and recreational scenarios. Although this approach may not be typical, there has been at least one precedent in Region III of a project going from study to Corrective Action without a baseline risk assessment.

In order to make the most of our 9 AM to 12 PM timeslot, we would like to focus the meeting on the three larger project issues which were identified in our 20 June letter. The issues are: additional source delineation, intraformational hydrogeology and risk assessment. Discussion and resolution of the three project issues will enable OxyChem to address the individual comments raised in EPA's 5 June Phase II RFI work plan comment letter. If additional clarification is needed after the meeting, the appropriate technical people from both parties can conference via telephone.

**Occidental Chemical Corporation**

Corporate Environmental Affairs
Occidental Tower, 5005 LBJ Freeway
P.O. Box 809050, Dallas, TX 75380-9050
972/404-3800

Potential Onsite Corrective Action

OxyChem's preferred approach to Corrective Action at Waste Lake 1, Waste Lake 3, and the Old Brine Sludge Landfill is to provide on-site, inplace containment. One method would be capping to eliminate infiltration, volatilization and direct contact. The waste materials are not in contact with ground water except perhaps on a seasonal basis at Waste Lake 1. Following containment, groundwater control would be provided downgradient of Waste Lake 1 to manage the ground water migration pathway. This SWMU however is the most downgradient of all the SWMUs mentioned above and which are all situated atop the subsurface paleochannel. This geologic feature functions as a preferred ground water flow pathway. Consequently, any ground water control for Waste Lake 1 will also manage any historical releases from the upgradient SWMUs.

Since many of the SWMUs were operated as a monofill-like (or essentially so) waste management unit, OxyChem believes that the limited Phase I waste boring analytical data is sufficient to represent the chemical quality of the entire SWMU. This data along with downgradient ground water quality data exceed conservative RBC screening criteria indicating that Corrective Action is warranted. Further sampling to delineate concentration gradients within these units (where the waste was deposited in a random manner and frequency) would only confirm what is already known from the Phase I data screening. Additionally, the limits and depths of these SWMUs are readily discernible from the surface and from design plans. Thus the areal extent and volume of waste materials can be calculated with reasonable certainty. Their relatively small size (2 to 4 acres) and their relatively homogeneous composition lend themselves to potential Corrective Action technologies that apply to the entire unit rather than to a portion of them. Accordingly, no additional source area delineation for these SWMUs is warranted or proposed.

With significant macro-scale hydraulic control of the ground water system provided by the subsurface paleochannel, the need for hydrogeologic investigation of seasonal perched water or individual sand lense flow pathways is not warranted. Additional ground water characterization is warranted however for the deeper Potomac Aquifer and will be conducted in Phase II. Initial data from previous studies on and adjacent to the site suggest that there is no vertical connection between the shallow and deep flow systems.

Phase II will however incorporate several source area identification and delineation tasks to fill data gaps. These tasks are proposed for the Sand Blast Grit Area and the Standard Chlorine Pipeline. The occurrence of any potential source areas within the active plant production area will be accomplished via downgradient ground water investigation and, if needed subsequent downgradient ground water control. The production area contains SWMUs of Concern such as the Waste Water Treatment Plant and the Former CCL4 Tank Area as well as other SWMUs previously characterized as

SWMUs of Minimal or No Concern. This more comprehensive downgradient approach to characterizing an active production area which, by its active nature presents limitations to implementation of remedial activities, has been previously accepted by EPA with the understanding that direct source area study may be warranted depending upon the ground water quality.

EPA's comments have also helped to identify the need for source area characterization in the 48-acre Waste Lake 3 in the vicinity of waste boring 6. Phase I waste concentrations exceed RBCs and Corrective Action is warranted, however the limits of the affected area are undefined. Phase II will incorporate a source area delineation task. Because of this unit's location away from potential Corrective Action activities at the plant and/or paleochannel SWMUs, the waste boring 6 area and the Chemfix Test area will likely require inplace containment, localized ground water control or consolidation within the other SWMUs as part of Corrective Action.

Risk Assessment

By looking ahead to Corrective Action and applying the existing Phase I data RBC screening which already calls for Corrective Action, likely remedial options have been identified. These options serve to manage the risk by eliminating the constituent migration pathways at each SWMU. As such, with a remedy(s) in mind, the need for a base line risk assessment becomes much less critical since it is not needed as a decision making tool to evaluate potential Corrective Action. This approach is consistent with the draft 1990 Proposed Corrective Action Rule which endorses risk screening as a tool for evaluating Corrective Action.

Part 2 Risk assessment will be utilized however to assess risk to ecological and recreational receptors in Red Lion Creek. The results of our regional ground water modeling show that Red Lion Creek serves as a ground water discharge boundary. This is not unexpected given the site's location adjacent to the 1500 foot wide Red Lion Creek marsh and the Delaware River, two regional ground water sinks. The model will be presented at our meeting.

Shallow ground water discharge from the site to the creek will likely undergo some constituent mass removal as it flows through adsorptive organic sediments and peat in the marsh (see attached site conceptual models). The effectiveness of the marsh sediments for removing mass will be evaluated by comparing shallow ground water quality data collected from proposed Phase II creek piezometers with similar data collected onsite along the same ground water flow path. Depending upon the sediment's capacity to attenuate constituents, the discharging ground water may or may not present an unacceptable risk. However, the accumulation of constituents in the sediments from the ground water flow and surface water runoff may also present some risk. OxyChem's location both downstream of two CERCLA sources area and downgradient of a portion of the Star landfarm and landfill will also contribute to constituents in the sediments.

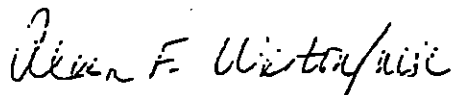
Future constituent contributions to the marsh following Corrective Action will be eliminated by such options as SWMU containment, surface water runoff controls and ground water control onsite. The remaining constituent mass in the ground water system will experience some attenuation as it flows through the organic sediments. The risks to the various receptors from both sediments and surface water will be calculated in Phase III following applicable guidance. Should the risk assessment determine that unacceptable risk is posed by the marsh sediments, one Corrective Action approach would be to remove the sediments, necessitating disruption of the marsh. Since the effectiveness of remediation at the adjacent upstream/upgradient source areas is unknown, there is the reality of continued accumulation of constituents following any remedial activity in the marsh. If the marsh sediments pose an unacceptable risk, OxyChem will include a section on risk management in the CMS to evaluate the risk posed by the marsh sediments against potential remedial actions and wetland disruption.

Summary

With the above approach, OxyChem feels we can quickly move ahead on the project without the need for an onsite baseline risk assessment, additional source area delineation or micro-scale hydrogeologic study. The site remediation practice has advanced over the past 20 years since RCRA was adopted such that the likely remedial option for any given site, physical setting and appropriate data set can be identified early in the process without the need for the level of study undertaken in the early stages of the practice. OxyChem views the Delaware City RFI within this perspective. EPA has also recognized this advancement in the practice through the approval of screening technologies and focused remedial studies. While this approach may not be typical of other projects, OxyChem has learned through its consultant that a similar approach was utilized and accepted by EPA Region III on at least one other Region III project in Southeastern Pennsylvania. In that project the data and risk screening efforts provided a clear indication that Corrective Action was needed and the physical circumstances and data necessitated what needed to be done without the need for a formal risk assessment as a remedy decision tool.

If you have any questions, please do not hesitate to call. I can be reached at (972) 404-2444.

Sincerely,

A handwritten signature in cursive script that reads "Alan F. Weston".

Alan F. Weston, Ph.D.

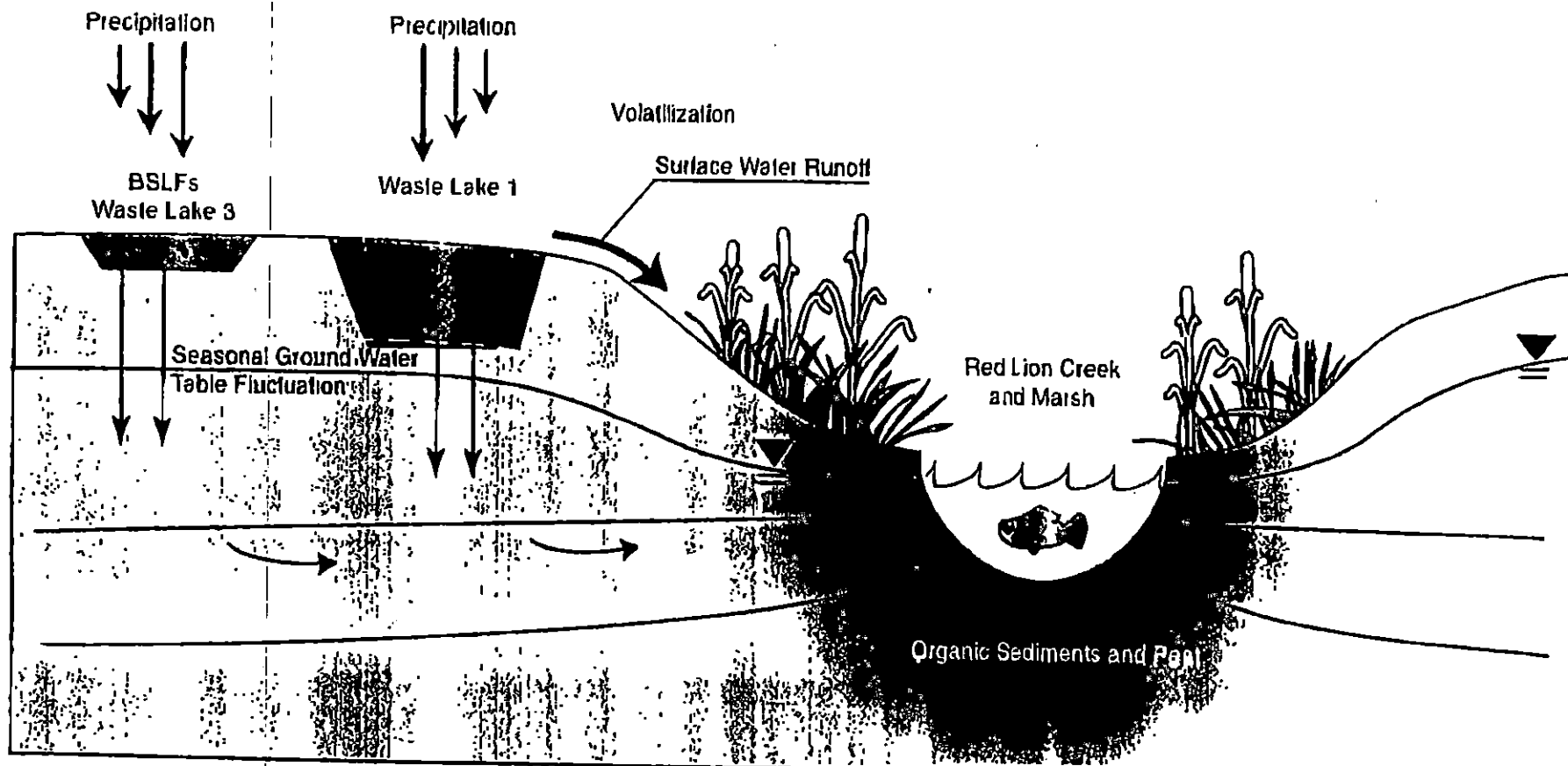
Director,
Remedial Programs

AW/

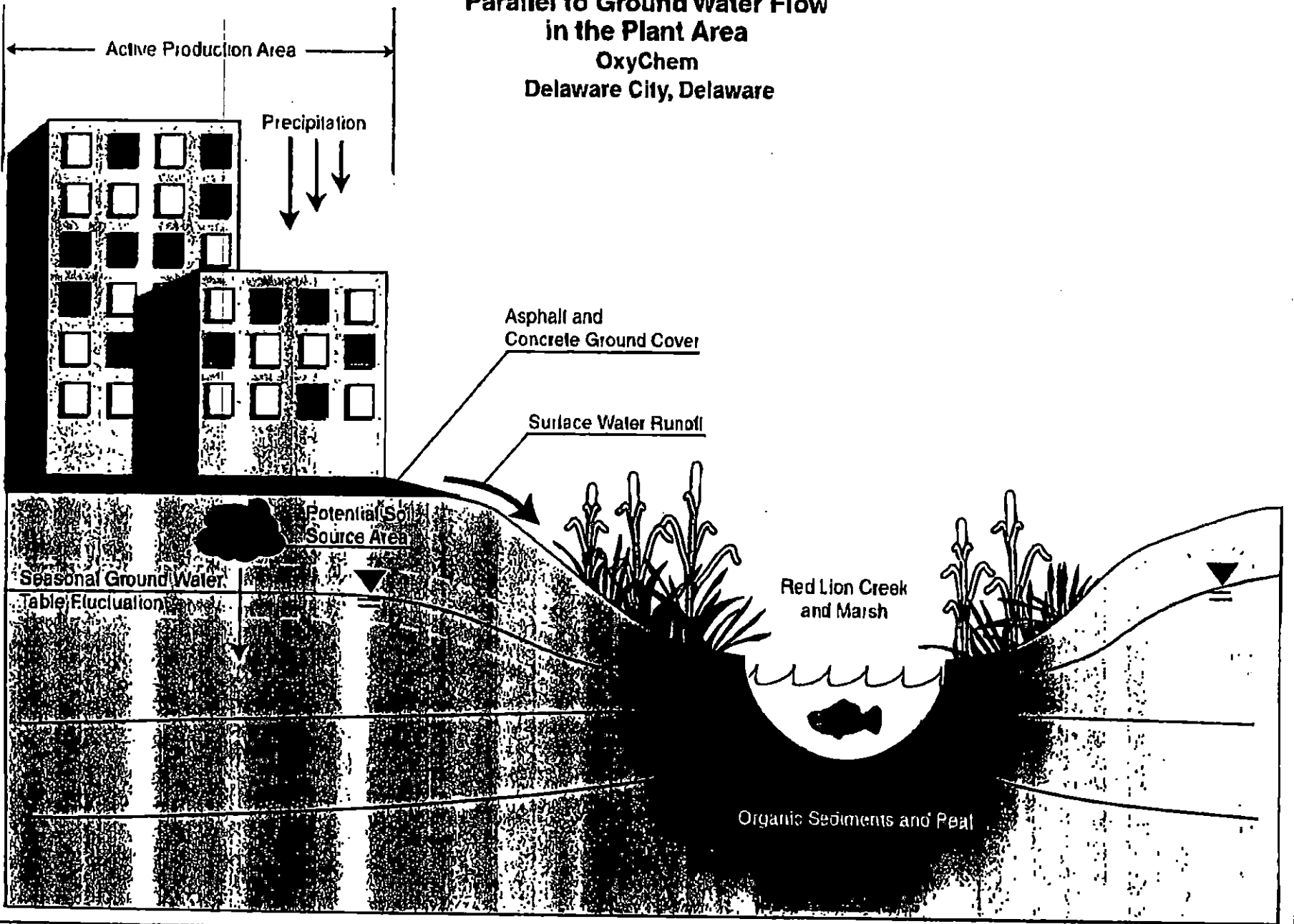
cc: EPA, Bob Greaves
DNREC, Mark Davis

attachments: 2 site conceptual models

**Conceptual Model
Parallel to Ground Water Flow
Through the Paleochannel
OxyChem
Delaware City, Delaware**



Conceptual Model Parallel to Ground Water Flow in the Plant Area OxyChem Delaware City, Delaware



AUG-12-1997 16:16

EPA RCRA

215 566 3113 P.02/05

7462



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

VIA TELEFAX AND
CERTIFIED MAIL
RETURN RECEIPT REQUESTED

☐ Date: _____
☒ File: Delaware City
☒ Fax to: Delaware City Env
☐ FedEx: _____
☐ cc: _____

August 12, 1997

Alan F. Weston, Ph.D.
Occidental Chemical Corporation
Occidental Tower, 5005 LBJ Freeway
P.O. Box 809050
Dallas, TX 75380-9050

Jim
please ensure that
Donna has characterized
our remediation concepts
correctly.
Thanks Alan.

RE: August 5, 1997 Meeting with EPA Region III and DNRRC
Occidental Chemical Corporation, Delaware City, Delaware RCRA
Facility

Dear Mr. Weston:

The purpose of this letter is to confirm and document the issues that were discussed during our August 5, 1997 meeting on the RCRA Corrective Action project at the Delaware City OxyChem Facility. EPA appreciated the opportunity to meet with you and your consultant to discuss the direction of the RFI project and Occidental's preferred approach for implementing corrective action at the Facility.

EPA was very encouraged by your interest in moving forward with the project and by Occidental's commitment to remediating the site. As discussed at the meeting, there are tools available under the Consent Order (i.e., interim measures, stabilization measures) that can allow Occidental to move forward with certain remedial measures at the Delaware City Facility prior to the completion of the RFI. EPA strongly supports the use of interim actions to reduce risks, prevent exposure, and control or reduce continuing releases of contaminants from soils to surface and groundwater. EPA welcomes the submittal of interim measures proposals for this Facility, as long as they are technically sound, appropriate for the facility-specific conditions, and consistent with any long-term remedy for the site. Please note that EPA also expects Occidental to address the remaining data

Alan F. Weston, Ph.D.

Page 2

August 12, 1997

gaps in the site characterization work (see EPA's May 29, 1997 letter), and to complete a full evaluation of the sources and extent of contamination and the potential impacts to human and ecological receptors at the Facility and in the marsh, wetlands, and general areas surrounding Red Lion Creek.

As indicated during our meeting, Occidental believes that the site is characterized sufficiently to move forward with the evaluation and potential implementation of specific remedial measures for waste management units and known areas of contamination at the Facility. The following includes a summary of the proposed remedial approach Occidental described during our August 5 meeting:

For Soil

a) On-site, in-place containment measures (i.e., capping, in-situ fixation) would be evaluated and used to eliminate infiltration, volatilization, and direct contact risks from select SWMUs located outside the process area (Waste Lake-1, Waste Lake-3, Old Brine Sludge Landfill). As stated at our meeting, Occidental is willing to implement remedial measures now to address each of the units in its entirety (based on existing design and construction documents), with additional characterization implemented as necessary to further delineate (or confirm) the boundaries of the unit, but without completing any further source area delineation.

b) Source control measures for the process area at the Facility would include making use of the existing paving (95% of area covered by asphalt or concrete) as some measure of containment, and downgradient groundwater monitoring to detect any releases from the units (wastewater treatment plant, standard chlorine pipeline, carbon tetrachloride unit). As previously agreed, additional source area investigation and abatement may be required for these units depending upon the groundwater quality and monitoring results from the Phase II installation and sampling of downgradient wells. In addition, Occidental has proposed the use of Institutional Controls (i.e., access control via existing security gates, deed restrictions, standard operating procedures to reduce/prevent releases in process area) to supplement the proposed source control measures.

c) Excavation, in-place containment, and in-situ fixation will be evaluated for the Chemfix unit, and;

AUG-12-1997 16:17

EPA RCRA

215 566 3113 P.04/85

Alan F. Weston, Ph.D.

Page 3

August 12, 1997

d) Additional characterization work will be completed to delineate the degree and extent of soil contamination present at Waste Lake-2.

For Groundwater

e) Following containment/excavation of soil sources, groundwater controls such as an interceptor trench, passive barrier, and hydraulic barrier would be evaluated for use at the downgradient edge of the active process area(s), but upgradient of the wetlands, to remediate groundwater beneath the Facility and to prevent future migration of contaminants from the source areas into the wetlands and Red Lion Creek. It is EPA's position that more characterization of the hydrogeologic conditions beneath the Facility will be required to effectively evaluate and design such a remedial system.

Please note that, any remedial actions implemented by OxyChem must be accompanied by stormwater control measures to prevent any further impacts to the marsh and wetlands surrounding Red Lion Creek.

We hope this accurately characterizes the discussion and presentation provided by ERM at our August 5 meeting. If not, please respond in writing to clarify any specific items. EPA expects any response, if necessary, to be submitted on September 5, 1997 with the responses to comments on the Phase II RFI Workplan, to ensure that we are all moving ahead with the same objectives in mind.

It is EPA's understanding that the next steps for the RFI project include Occidental's submittal of responses to the comments provided in our May 29, 1997 letter. These responses are due to EPA by September 5, 1997. With the completion of the additional characterization work identified in EPA and DNREC's May 29, 1997 comment letter, and the ecological assessment work required by Phase III of the RFI, sufficient information should be available to address our remaining concerns and to provide a sound technical basis in support of the remedial approach proposed by Occidental. As indicated during our meeting, the additional characterization work is also required to confirm and support the presence of the paleochannel beneath the site, and the conceptual groundwater flow model Occidental has developed for this Facility. EPA also has some concerns regarding whether the overall approach will be appropriate to protect the ecosystem that is situated adjacent to and downgradient from the site.

AUG-12-1997 16:17

EPA RCRA

215 566 3113 P.05/05

Alan F. Weston, Ph.D.

Page 4

August 12, 1997

Depending upon what we find during the completion of the Phase II and III RFI work, the remedial approach proposed by Occidental may need to be revised to address potential long-term impacts to the ecosystem.

In addition, EPA expects to receive a proposal from Occidental for completion of interim actions or stabilization projects that would include some or all of the remedial measures described above. If you would like to discuss this further, please feel free to contact me and we can make arrangements for a conference call.

Please note that we cannot formally respond to your proposal to eliminate the Baseline Risk Assessment (see July 31 letter from Occidental to EPA) from this project until we have an opportunity to discuss this matter internally and get feedback from our RCRA Program management. We will contact you once we have completed our discussions.

This concludes our summary of the August 5, 1997 meeting between Occidental, EPA and DNREC. Please contact me at (215) 566-3427 if you have any questions regarding this letter.

Sincerely,



Donna McCartney, 3HW90
USEPA Project Manager

cc: B. Greaves, 3HW90
D. Goldblum, 3HW90
R. Prince, 3HW70
A. Rittberg, DNREC
E. Schiela, USACE

APPENDIX B

DUFFIELD ASSOCIATES STRUCTURAL GEOLOGIC MAP OF THE BASE OF THE COLUMIBA FORMATION

Figure 6
Structural Contour Map Base
of Columbia Formation Beneath
Disposal Impoundments Area.
Duffield Assoc. 1983

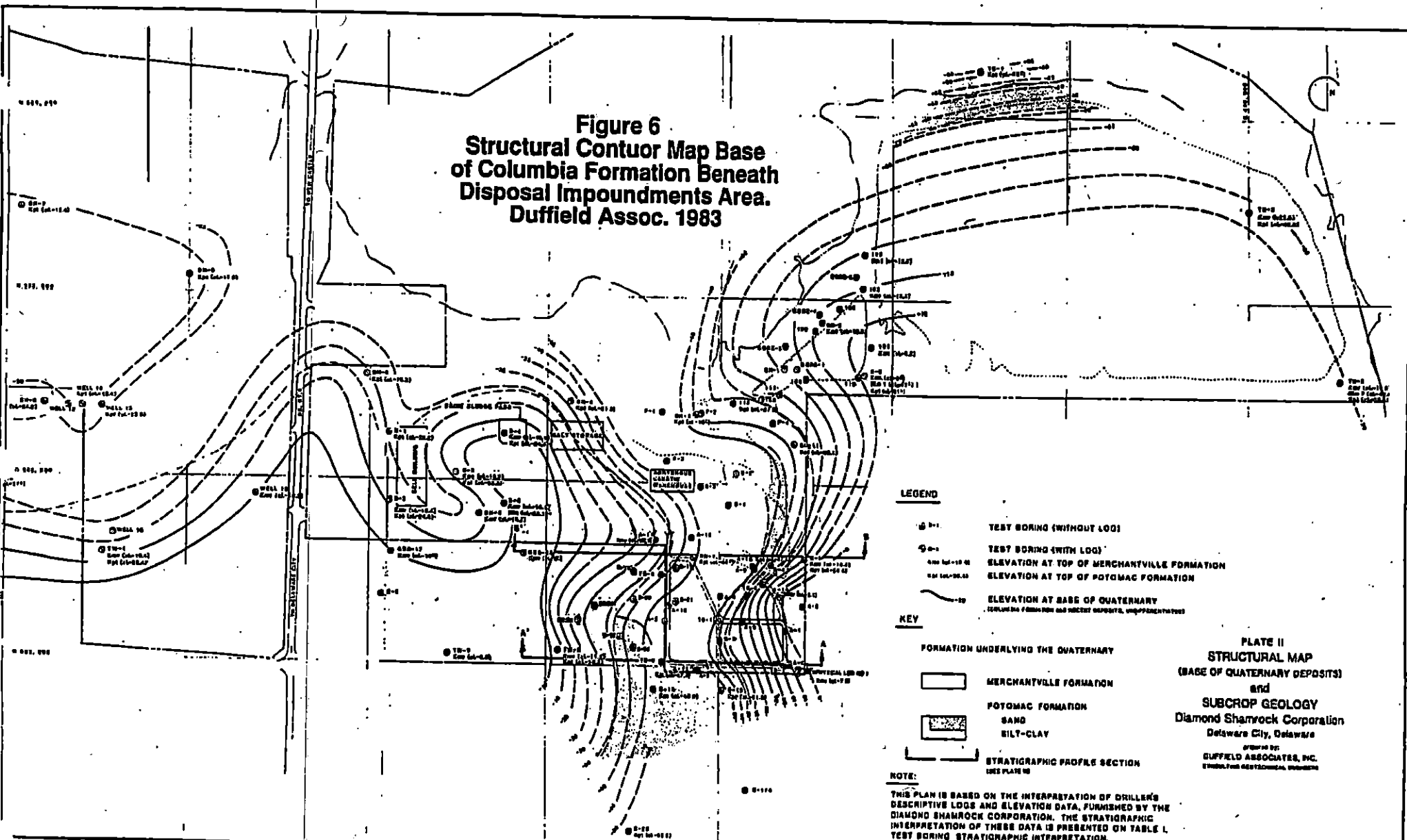


PLATE II
STRUCTURAL MAP
(BASE OF QUATERNARY DEPOSITS)
and
SUBCROP GEOLOGY
Diamond Shamrock Corporation
Deltaware City, Delaware
 DRAWN BY:
DUFFIELD ASSOCIATES, INC.
 1700 N. 10TH STREET, PHILADELPHIA, PA. 19102

18 72203

Drawn by / Date: DG 9/89

Checked by / Date: DW 9/89

Revised by / Date:

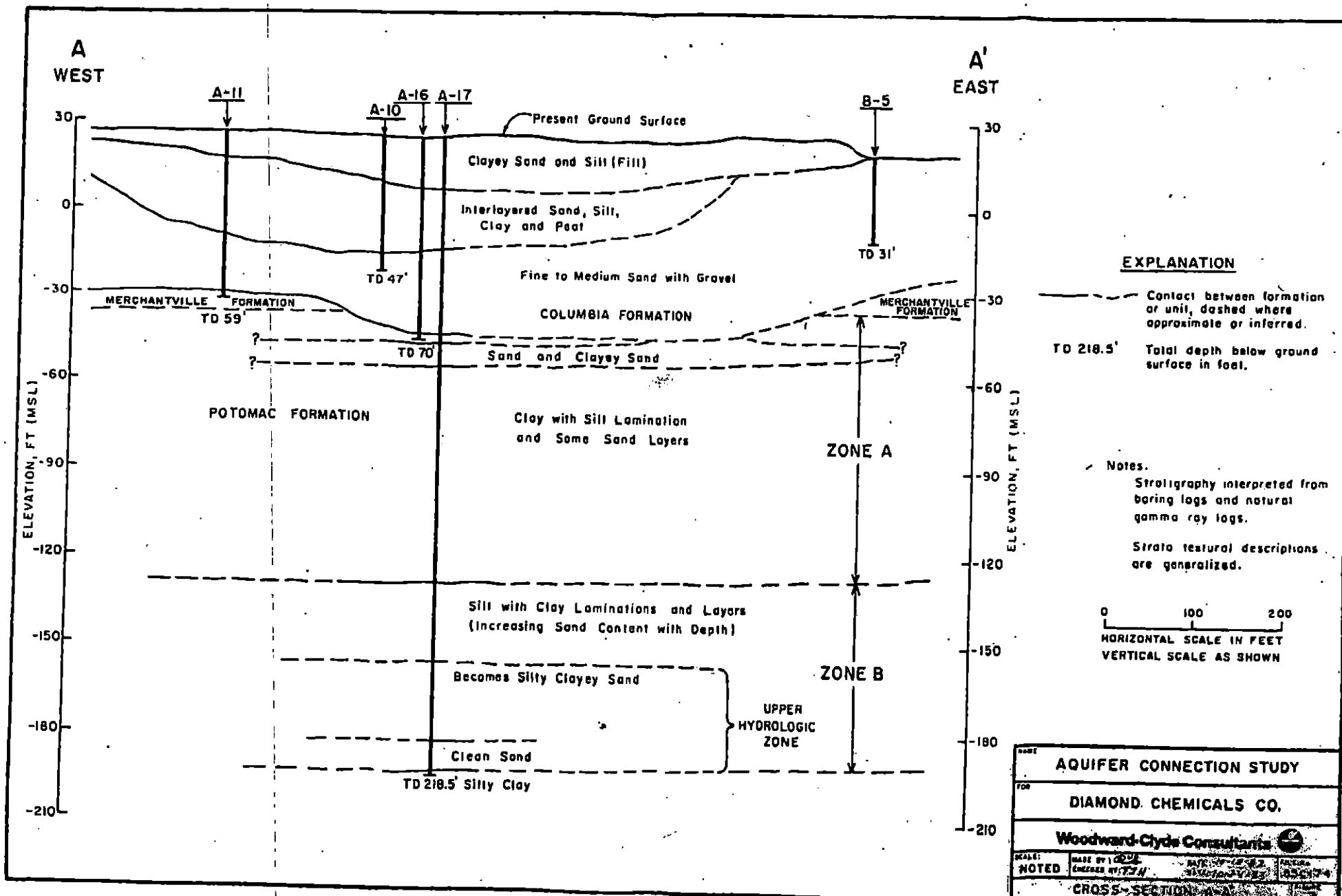
Checked by / Date:

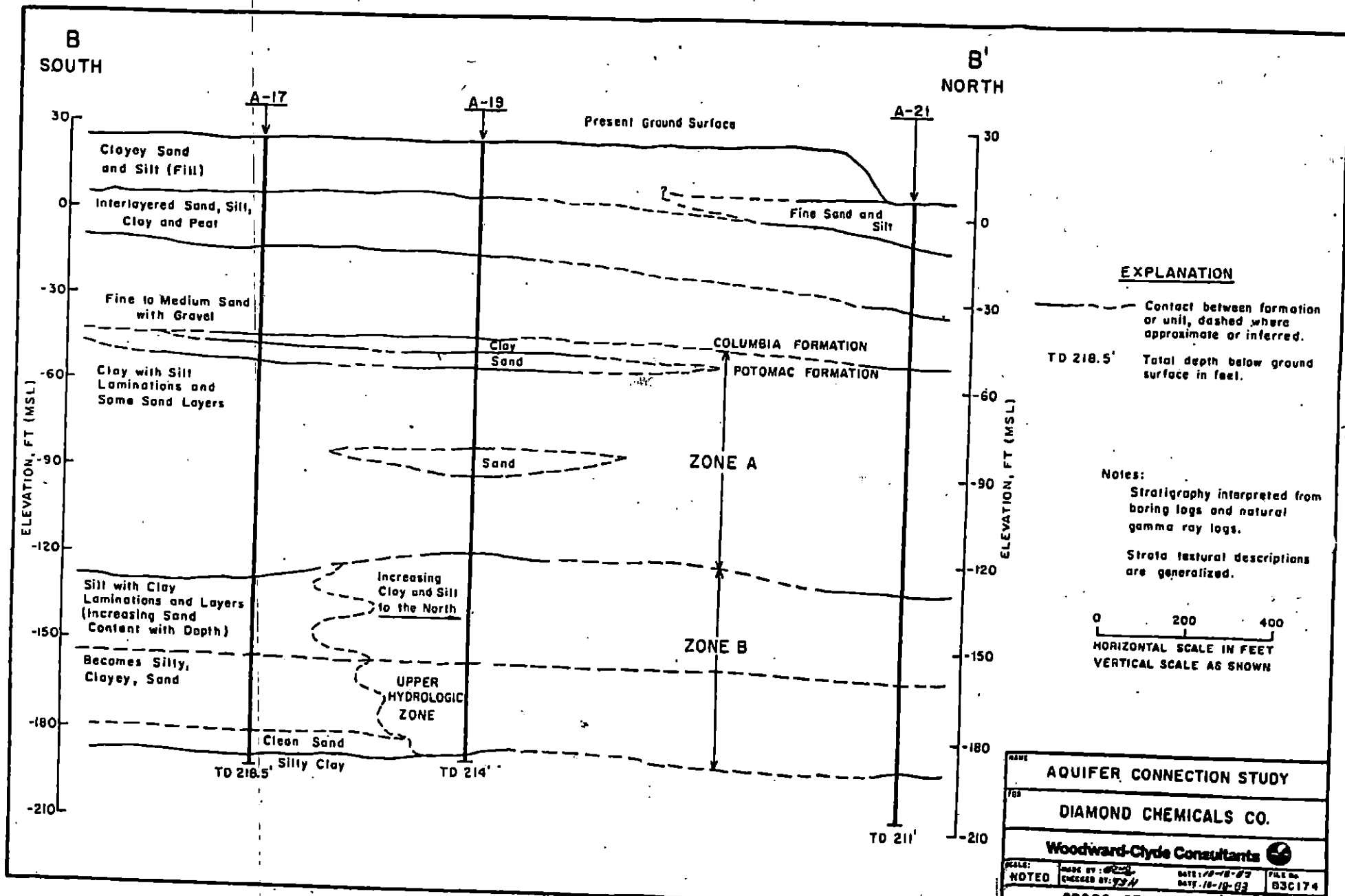
APPENDIX C

WOODWARD-CYLDE CROSS-SECTION
AT SITE

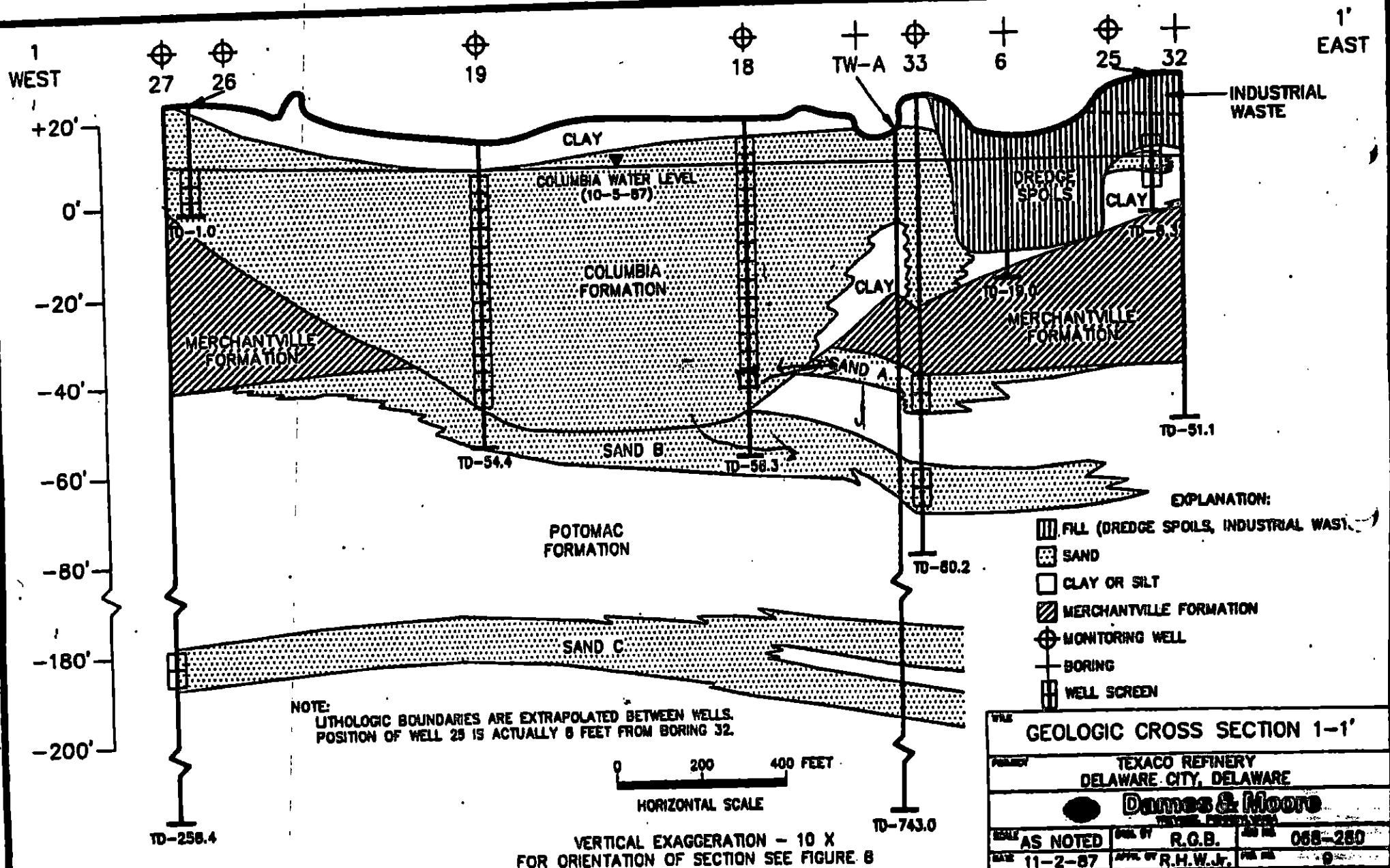
APPENDIX C

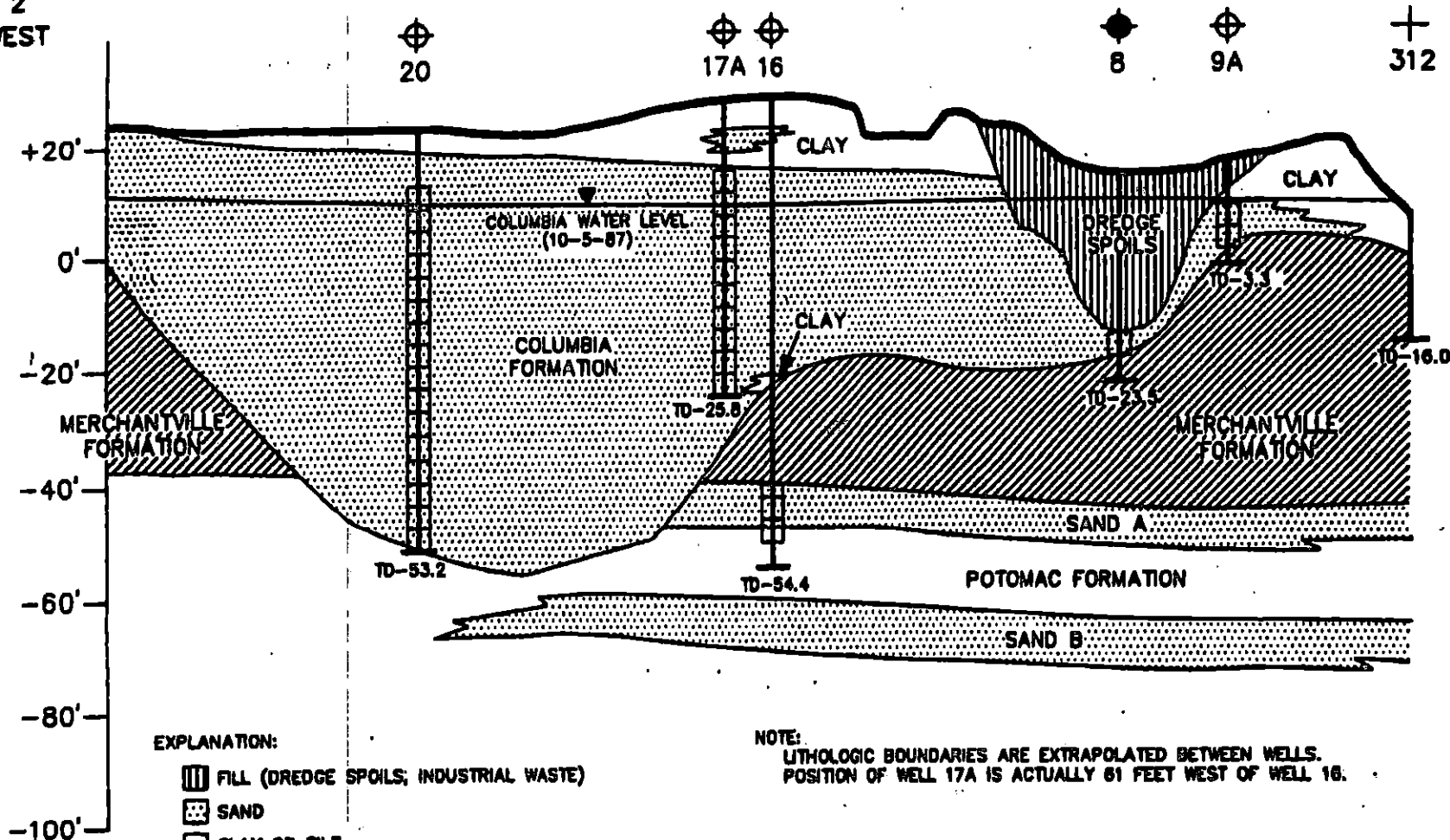
WOODWARD-CYLDE CROSS-SECTION
AT SITE





APPENDIX D
DAMES & MOORE GEOLOGIC CROSS-SECTION
SHOWING THE COLUMBIA FORMATION CHANNEL
GEOMETRY AT STAR



2
WEST2'
EAST

EXPLANATION:

- FILL (DREDGE SPOILS; INDUSTRIAL WASTE)
- SAND
- CLAY OR SILT
- MERCHANTVILLE FORMATION
- MONITORING WELL
- DECOMMISSIONED MONITORING WELL
- BORING
- WELL SCREEN

NOTE:

LITHOLOGIC BOUNDARIES ARE EXTRAPOLATED BETWEEN WELLS.
POSITION OF WELL 17A IS ACTUALLY 61 FEET WEST OF WELL 16.

0 200 400 FEET
HORIZONTAL SCALE

VERTICAL EXAGGERATION - 10 X
FOR ORIENTATION OF SECTION SEE FIGURE 8

TITLE			
GEOLOGIC CROSS SECTION 2-2'			
PROJECT			
TEXACO REFINERY DELAWARE CITY, DELAWARE			
DRAWN BY			
Dames & Moore			
SCALE	DATE BY	DATE	FILE NO.
AS NOTED	R.G.B.	11-2-87	068-280
DATE	APPROVED BY	DATE	FILE NO.
11-2-87	R.H.W.Jr.	11-2-87	10

3
WEST

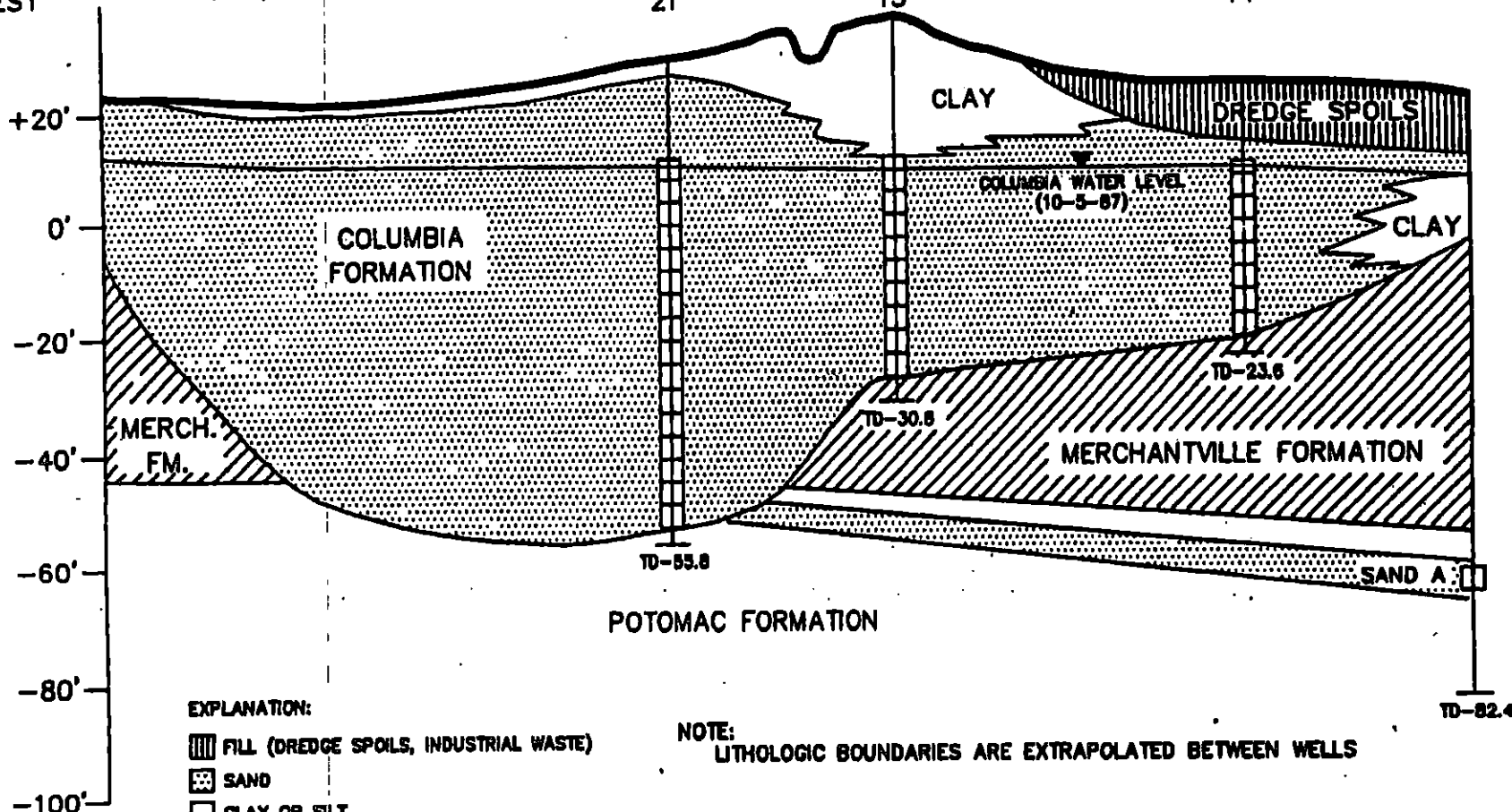
3'
EAST

21

13

14

3-B

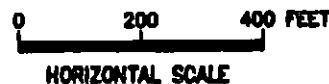


EXPLANATION:

- FILL (DREDGE SPOILS, INDUSTRIAL WASTE)
- SAND
- CLAY OR SILT
- MERCHANTVILLE FORMATION
- MONITORING WELL
- WELL SCREEN

NOTE:

LITHOLOGIC BOUNDARIES ARE EXTRAPOLATED BETWEEN WELLS

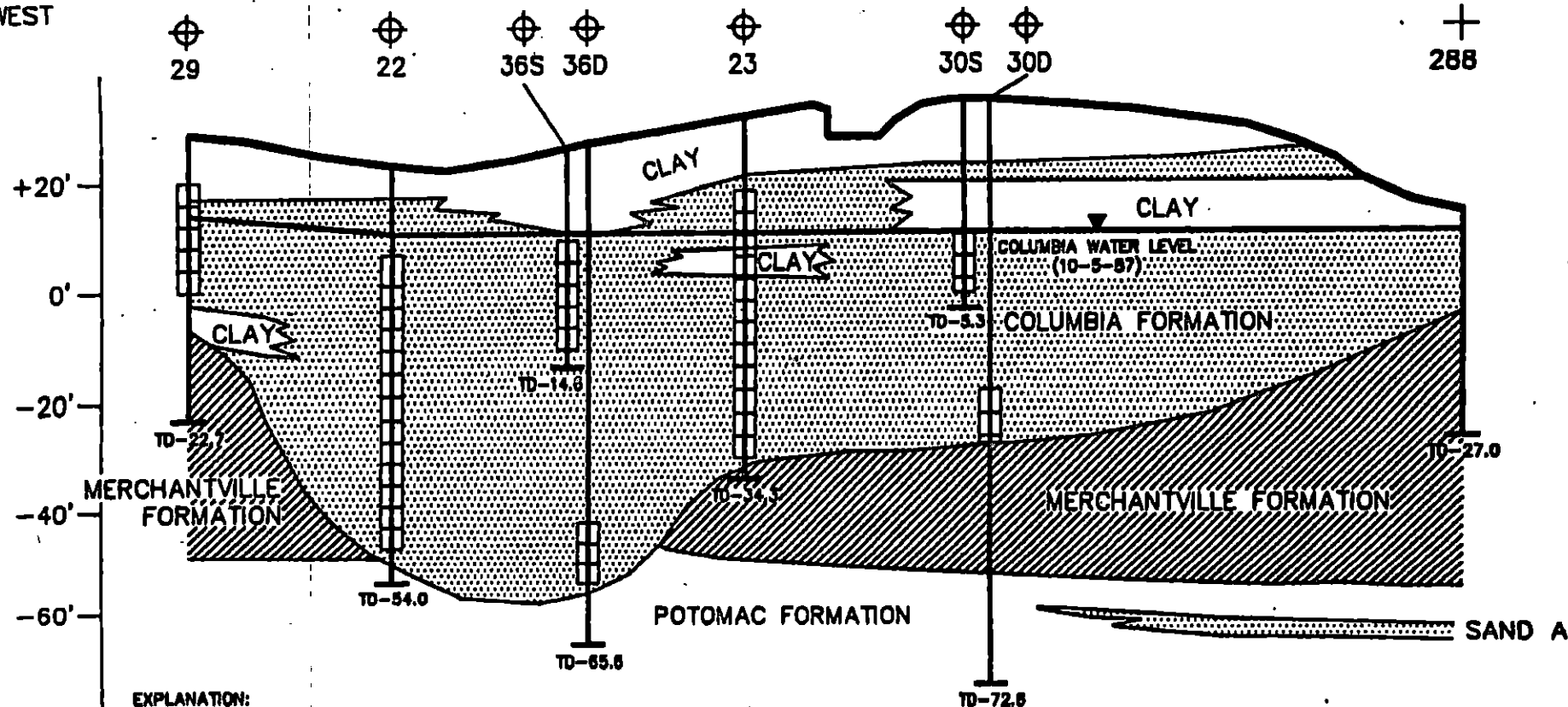


VERTICAL EXAGGERATION - 10 X
FOR ORIENTATION OF SECTION SEE FIGURE 8

GEOLOGIC CROSS SECTION 3-3'			
PROJECT TEXACO REFINERY DELAWARE CITY, DELAWARE			
DAMES & MOORE ENGINEERS			
SCALE AS NOTED	DES. BY R.G.B.	065-280	
DATE 11-2-87	CHK. BY R.H.W.J.	PL. BY	11

4
WEST

4'
EAST



EXPLANATION:

- FILL (DREDGE SPOILS, INDUSTRIAL WASTE)
- SAND
- CLAY OR SILT
- MERCHANTVILLE FORMATION
- MONITORING WELL
- BORING
- WELL SCREEN

NOTE:

LITHOLOGIC BOUNDARIES ARE EXTRAPOLATED BETWEEN WELLS
WELL 36S IS ACTUALLY 9' EAST OF WELL 36D.
WELL 30S IS ACTUALLY 9' EAST OF WELL 30D.

0 200 400 FEET

HORIZONTAL SCALE

VERTICAL EXAGGERATION - 10 X
FOR ORIENTATION OF SECTION SEE FIGURE 8

TITLE GEOLOGIC CROSS SECTION 4-4'			
PROJECT TEXACO REFINERY DELAWARE CITY, DELAWARE			
Dames & Moore CONSULTING ENGINEERS			
SCALE AS NOTED	DATE 11-2-87	BY R.G.B.	NO. 088-280
DATE		APPROVED BY R.H.W.Jr.	FILE NO. 12

APPENDIX E

PRELIMINARY RBC SCREENING OF PHASE I DATA

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
WASTE LAKE 1			
Soil/Waste (concentrations in mg/kg)			
benzene	1800	22	0.02
chlorobenzene	3400	1600	0.6
vinyl chloride	90	0.34	0.01
2-chloroethylvinyl ether	0.059	2000	NA
1,2-dichloroethene, total	0.27	700	0.2
trichloroethene	0.03	58	0.02
1,3-dichlorobenzene	1700	7000	NA
1,4-dichlorobenzene	9500	27	1
1,2-dichlorobenzene	7000	7000	6
1,2,4-trichlorobenzene	300	780	2
hexachlorobenzene	40	0.4	0.8
bis(2-ethylhexyl)phthalate	8100	46	11
arsenic	4.8	0.43	15
barium	8700	5500	32
beryllium	0.63	0.15	180
cadmium	6.9	39	6
chromium	1300	390	19
copper	500	3100	NA
iron	23800	23000	NA
lead	220	400	NA
manganese	260	1800	NA
mercury	42000	7.8	NA
nickel	110	1600	21
silver	9.6	390	NA
sodium	13000	NA	NA
zinc	1700	23000	42000
Ground Water (concentrations in µg/L)			
vinyl chloride	26	0.019	N/A
chloroform	12	0.15	N/A
benzene	62000	0.36	N/A
chlorobenzene	170000	39	N/A
methylene chloride	140	41	N/A

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
WASTELAKE 1			
Ground Water (concentrations in µg/L)			
1,3-dichlorobenzene	1800	540	N/A
1,4-dichlorobenzene	22000	0.44	N/A
1,2-dichlorobenzene	18000	270	N/A
1,2,4-trichlorobenzene	3300	190	N/A
bis(2-ethylhexyl)phthalate	62	4.8	N/A
Total Metals			
arsenic	1020	0.045	N/A
barium	355	2600	N/A
cadmium	7.3	18	N/A
chromium	396	180	N/A
copper	239	1500	N/A
iron	342000	11000	N/A
lead	35	15	N/A
manganese	46200	840	N/A
mercury	248	3.7	N/A
nickel	192	730	N/A
sodium	1690000	NA	N/A
zinc	683	11000	N/A
Dissolved Metals			
arsenic	650	0.045	N/A
barium	317	2600	N/A
iron	5900	11000	N/A
manganese	38700	840	N/A
mercury	641	3.7	N/A
sodium	2280000	NA	N/A
zinc	86.9	11000	N/A

WASTELAKE 2

Soil/Waste (concentrations in mg/kg)

benzene	51	22	0.02
chlorobenzene	290	1600	0.6
methylene chloride	0.004	85	0.01
toluene	0.006	16000	5
trichlorofluoromethane	0.0196	23000	13
1,3-dichlorobenzene	8.8	7000	NA

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
WASTELAKE 2			
Soil/Waste (concentrations in mg/kg)			
1,4-dichlorobenzene	140	27	1
1,2-dichlorobenzene	140	7000	5
1,2,4-trichlorobenzene	100	780	2
bis(2-ethylhexyl)phthalate	1	46	11
di-N-butyl phthalate	0.14	7800	120
butyl benzyl phthalate	0.92	16000	68
antimony	7.2	31	NA
arsenic	29	0.43	15
barium	620	5500	32
beryllium	2.5	0.15	180
cadmium	3	39	6
chromium	110	390	19
copper	63	3100	NA
iron	35000	23000	NA
lead	190	400	NA
manganese	4200	1800	NA
mercury	270	7.8	NA
nickel	40	1600	21
sodium	18000	NA	NA
zinc	420	23000	42000
Ground Water (concentrations in µg/L)			
chloroform	3.3	0.15	N/A
Total Metals			
arsenic	10	0.045	N/A
barium	1230	2600	N/A
chromium	62.9	180	N/A
copper	53.5	1500	N/A
iron	192000	11000	N/A
manganese	153000	840	N/A
nickel	94.2	730	N/A
sodium	3290000	NA	N/A
zinc	124	11000	N/A

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening
			Levels for Transfers to Ground Water
WASTELAKE 2			
Ground Water (concentrations in µg/L)			
Dissolved Metals			
barium	1230	2600	N/A
chromium	25.4	180	N/A
iron	192000	11000	N/A
manganese	157000	840	N/A
nickel	93.9	730	N/A
sodium	3770000	NA	N/A
zinc	95.3	11000	N/A

WASTELAKE 3

Soil/Waste (concentrations in mg/kg)

vinyl chloride	2900	0.34	0.01
chloroethane	2.1	31000	33
methylene chloride	0.66	85	0.01
1,1-dichloroethane	0.03	7800	11
1,2-dichloroethene, total	0.084	700	NA
chloroform	0.035	100	0.3
trichloroethene	0.11	58	0.02
benzene	0.07	22	0.02
tetrachloroethene	0.06	12	0.04
toluene	0.023	16000	5
chlorobenzene	11.4	1600	0.6
bis(2-ethylhexyl)phthalate	430	46	11
indeno(1,2,3-cd)pyrene	36	0.88	35
dibenz(a,h)anthracene	36	0.088	11
benzo(g,h,i)perylene	45	NA	NA
antimony	144	31	NA
arsenic	6.2	23	15
barium	374	5500	32
cadmium	1.5	39	6
chromium	79	390	19
copper	36	3100	NA
iron	23000	23000	NA
lead	580	400	NA
manganese	510	1800	NA

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
WASTELAKE 3			
Soil/Waste (concentrations in mg/kg)			
mercury	1400	7.8	NA
nickel	20	1600	21
sodium	1400	NA	NA
zinc	78	23000	42000
Ground Water (concentrations in µg/L)			
chlorobenzene	15	39	N/A
1,4-dichlorobenzene	1.6	0.44	N/A
1,2-dichlorobenzene	3.5	270	N/A
bis(2-ethylhexyl)phthalate	22	4.8	N/A
Total Metals			
iron	279	11000	N/A
manganese	99.4	840	N/A
selenium	17.8	180	N/A
sodium	332000	NA	N/A
zinc	273	11000	N/A
Dissolved Metals			
selenium	16.5	180	N/A
sodium	386000	NA	N/A
zinc	105	11000	N/A

CHEMFIX TEST UNIT

Soil/Waste (concentrations in mg/kg)

vinyl chloride	940	0.34	0.01
chloroform	18	100	0.5
1,2-dichloroethane	470	7	0.01
1,2-dichloroethene, total	13	700	0.2
benzene	35	22	0.02
chlorobenzene	37	1600	0.6
ethylbenzene	30	7800	5
trichloroethene	12	58	0.02
tetrachloroethene	10	12	0.04
arsenic	15	0.43	15
barium	81	5500	32
beryllium	0.77	0.15	180

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
CHEMFIX TEST UNIT			
Soil/Waste (concentrations in mg/kg)			
cadmium	1.2	39	6
chromium	19	390	19
copper	14	3100	NA
iron	21000	23000	NA
lead	24	400	NA
manganese	1600	1800	NA
mercury	80	78	NA
nickel	17	1600	21
sodium	3700	NA	NA
zinc	88	23000	42000
Ground Water (concentrations in µg/L)			
vinyl chloride	150	0.019	N/A
chloroform	14	0.15	N/A
carbon tetrachloride	180	0.16	N/A
tetrachloroethene	4	1.1	N/A
Total Metals			
arsenic	17.9	0.045	N/A
chromium	23.5	180	N/A
iron	5430	11000	N/A
manganese	320	840	N/A
mercury	7.6	37	N/A
sodium	477000	NA	N/A
zinc	43.1	11000	N/A
Dissolved Metals			
arsenic	14.8	0.045	N/A
chromium	21.7	180	N/A
manganese	95.8	840	N/A
mercury	8.7	37	N/A
sodium	511000	NA	N/A
zinc	49.6	11000	N/A

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
<u>NEW BRINE SLUDGE LANDFILL</u>			
Ground Water (concentrations in µg/L)			
bis(2-ethylhexyl)phthalate	4.6	4.8	N/A
Total Metals			
barium	318	2600	N/A
chromium	11.7	180	N/A
copper	31.2	1500	N/A
iron	34000	11000	N/A
lead	11.5	15	N/A
manganese	11500	840	N/A
mercury	4.8	3.7	N/A
selenium	17.2	180	N/A
sodium	479000	NA	N/A
zinc	482	11000	N/A
Dissolved Metals			
barium	221	2600	N/A
iron	19300	11000	N/A
manganese	10200	840	N/A
mercury	4.7	3.7	N/A
selenium	13.4	180	N/A
sodium	546000	NA	N/A
zinc	272	11000	N/A

OLD BRINE SLUDGE LANDFILL

Soil/Waste (concentrations in mg/kg)

vinyl chloride	210	0.34	0.01
chloroform	0.89	100	0.3
benzene	3.8	22	0.02
tetrachloroethene	1.9	12	0.04
bis(2-ethylhexyl)phthalate	990	46	11
antimony	23	31	NA
arsenic	24.6	23	15
barium	690	5500	32
beryllium	0.74	0.15	180
cadmium	2.8	39	6
chromium	27	390	19

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening Levels for Transfers to Ground Water
OLD BRINE SLUDGE LANDFILL			
Soil/Waste (concentrations in mg/kg)			
copper	130	3100	NA
iron	15500	23000	NA
lead	170	400	NA
manganese	1590	1800	NA
mercury	4400	7.8	NA
nickel	35	1600	21
sodium	12000	NA	NA
zinc	1100	23000	42000
Ground Water (concentrations in µg/L)			
diethyl phthalate	2.3	29000	N/A
Total Metals			
barium	215	2600	N/A
iron	33000	11000	N/A
lead	7	NA	N/A
manganese	7880	840	N/A
mercury	0.5	3.7	N/A
nickel	53.5	730	N/A
sodium	793000	NA	N/A
zinc	82.7	11000	N/A
Dissolved Metals			
barium	230	2600	N/A
iron	27800	11000	N/A
manganese	7280	840	N/A
nickel	51.1	730	N/A
sodium	979000	NA	N/A
zinc	68.9	11000	N/A

FORMER DRAIN POND SOUTH OF WASTE LAKE 1

Soil/Waste (concentrations in mg/kg)

arsenic	2.9	23	15
barium	99	5500	32
beryllium	0.89	0.15	180
chromium	31	390	19
iron	17000	23000	NA
lead	35	400	NA

Appendix A
Comparison of Maximum Phase I Concentrations to USEPA RBC Screening Levels
Occidental Chemical Corporation
Delaware City, Delaware

Constituent	Maximum Concentration	USEPA Region III RBC *	USEPA Soil Screening
			Levels for Transfers to Ground Water
<u>FORMER DRAIN POND SOUTH OF WASTE LAKE 1</u>			
Soil/Waste (concentrations in mg/kg)			
manganese	540	1800	NA
mercury	3.3	7.8	NA
nickel	18	1600	21
sodium	280	NA	NA
zinc	170	23000	42000

Notes:

* = Tap water risk-based concentrations (RBCs) used to compare to ground water concentrations.

Residential soil RBCs used to compare to soil concentrations.

NA = Not Available

N/A = Not Applicable

APPENDIX F

JUSTIFICATION OF NON-RESIDENTIAL USE STANDARD FOR THE SITE



JUSTIFICATION FOR A FUTURE INDUSTRIAL USE SCENARIO FOR THE SITE

**Corrective Action Program
Occidental Chemical Corporation
Delaware City, Delaware**

APRIL 1999

REF. NO. 7461 (1)

This report is printed on recycled paper.

CONESTOGA-ROVERS & ASSOCIATES

Printed April 14, 1999

TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY	
EXECUTIVE SUMMARY	4
1.0 INTRODUCTION.....	1
1.1 PURPOSE.....	1
1.2 BACKGROUND.....	1
2.0 SITE DESCRIPTION.....	3
2.1 CURRENT SITE DESCRIPTION.....	3
2.2 HISTORICAL SITE DESCRIPTION	4
3.0 CURRENT SURROUNDING LAND USE	9
3.1 LAND USE.....	9
3.2 ERIIS DATABASE SEARCH	9
3.2.1 FEDERAL DATABASES.....	9
4.0 POPULATION INFORMATION	17
5.0 WATER USE.....	18
6.0 PROJECTED FUTURE USE.....	21
7.0 CONCLUSIONS	23

LIST OF FIGURES

FIGURE 1	SITE LOCATION MAP
FIGURE 2	SITE FACILITIES MAP
FIGURE 3	LAND USE MAP
FIGURE 4	POTOMAC FORMATION WELL LOCATIONS AND 1995 WITHDRAWALS

TABLES

TABLE 1	1990 POPULATION OF TRACTS 164 AND 165 BY AGE DISTRIBUTION
TABLE 2	DNREC WATER USE DATA - 1995

EXECUTIVE SUMMARY

The Delaware City Plant is located approximately three miles northwest of Delaware City, Delaware in a heavily industrial and commercial setting surrounded by rural agricultural land. The plant processing area, which occupies approximately 21 acres of the 300-acre property, manufactures chlorine, hydrogen, sodium hydroxide, and potassium hydroxide by the electrolysis of NaCl and KCl brines. In addition to the plant process area, the facility consists of several landfills, waste lake units, and a marsh area. The landfills and waste lakes are no longer used for disposal purposes. They have been capped and are overgrown with natural grass and/or phragmites. The remainder of the property consists of a marsh area between the plant process area and Red Lion Creek.

The Delaware City, Delaware Plant has been in operation since it was built in 1965 and is likely to remain an industrial facility. The Site is located in the middle of a large area consisting of heavy industry and commercial facilities to support the industry (e.g., transportation). Furthermore, the long time use of the Plant and surrounding area for heavy industry has led to a state of almost ubiquitous soil and shallow groundwater contamination. For these reasons, the concept of a residential area supplanting this heavy industrial area is not practical in the near or long term. In order for a residential area to supplant the present heavy industrial area, all or most of the sites would have to be remediated to residential standards. The projected future use of the Plant and large area surrounding the plant is for industrial purposes. This conclusion is consistent with EPA policy, which recognizes that RCRA facilities typically are industrial properties that are actively managed.

At this time, OxyChem plans to continue operation of the plant for the purpose of manufacturing chlorine into the foreseeable future. With regard to site-specific environmental issues, OxyChem plans to implement appropriate deed restrictions, engineering controls, and institutional controls, as required. Furthermore, the site may be divided into subsections allowing for various degrees of remediation. For example, deed restrictions and institutional controls may allow the manufacturing area to remain industrial.

Current groundwater usage in the surrounding area is also likely to continue. The Potomac Aquifers will be used as the major source of potable and industrial water. Use of the Columbia Aquifer for residential water supplies may continue. Presently all residential users are located north of Red Lion Creek, which acts as a hydrogeologic barrier to preclude any potential impacts to these wells from the OxyChem site. Future

residential development in the area, if any, would likely be served by a public water system deriving its water from the Potomac Aquifers or transmitted from another distant source via a pipeline. Pumping of the Columbia Aquifer to the south and west by Motiva (formerly Star) and Metachem (formerly Standard Chlorine) for remediation purposes does not influence groundwater at the OxyChem site. Continued pumping of the Columbia Formation by these facilities is not expected to influence the groundwater flow in the Columbia Formation at the OxyChem site, which is to the north with discharge to Red Lion Creek.

Based on the information presented in this justification document, OxyChem concludes that a non-residential use scenario is appropriate for site soils and groundwater. Part 1 of the Phase III risk assessment will be a pathway analysis for on-site areas of the facility. Under a Corrective Action program, exposure points along each pathway will be eliminated through institutional or engineering controls. As a component of this analysis, OxyChem will assume a non-residential use scenario for site soils and groundwater.

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this document is to provide justification for a future non-residential use scenario for soils and groundwater at Occidental Chemical's Delaware City, Delaware facility. EPA recognizes that RCRA facilities typically are industrial properties that are actively managed. Therefore, consideration of non-residential (industrial) uses is especially likely to be appropriate for RCRA facility cleanups (OSWER Directive No. 9355.7-04).

1.2 BACKGROUND

A preliminary, conservative risk screening using worst case residential RBCs and Phase I data suggests that remediation may be required at several SWMUs. Along with the recently collected Phase II data, OxyChem believes it has sufficient data and information on these SWMUs with which to evaluate potential remedial alternatives. Likely remedial options have been identified that will serve to manage the risk by eliminating the constituent migration pathways at each SWMU. Therefore, the need for a baseline risk assessment becomes much less critical since it is not needed as a decision making tool to evaluate potential Corrective Action. This approach is consistent with the draft 1990 Proposed Corrective Action Rule, which endorses risk screening as a tool for evaluating Corrective Action. EPA is evaluating this approach as presented in OxyChem's July 31, 1997, letter regarding OxyChem's proposed corrective action approach for the site and as discussed at the subsequent August 5, 1997 meeting between EPA, OxyChem and DNREC. OxyChem further described the proposed risk screening approach in the July 17, 1998 Phase II RFI Work Plan.

The Phase III risk assessment will be divided into two parts both of which would be conducted concurrently. Part 1 will be a pathway analysis for on-site areas of the facility, while Part 2 will entail a risk assessment for off-site areas. Under a Corrective Action program, exposure points along each pathway will be eliminated through institutional or engineering controls. This document focuses on Part 1. A component of the Part 1 analysis will be based on a non-residential scenario as a reasonable future use for site soils and groundwater. OxyChem believes that a non-residential use scenario is the most appropriate for site soils and groundwater.

As per the Phase II RFI Work Plan, data were collected to support the evaluation of a non-residential use scenario for the site. State and county agencies were contacted to collect the necessary data. Information evaluated included zoning maps, community master plans, population projections, infrastructure, and social, cultural and historical issues. Information regarding the continuing non-residential use of the site, and the plant's position in this industry was also included. This report presents the information to justify a future non-residential use scenario for site soils and groundwater.

2.0 SITE DESCRIPTION

2.1 CURRENT SITE DESCRIPTION

The Delaware City Plant is located approximately three miles northwest of Delaware City, Delaware in a heavily industrial and commercial setting surrounded by rural agricultural land. A site location map is presented in Figure 1. The plant manufactures chlorine, hydrogen, sodium hydroxide, and potassium hydroxide by the electrolysis of NaCl and KCl brine.

Figure 2 provides a site facilities map. The facility is situated on a 300-acre (approximate) tract of land 3.5 miles northwest of Delaware City, Delaware in New Castle County. The facility's processing area occupies approximately 21 acres of the 300-acre property. In addition to the plant process area, the facility consists of several landfills, waste lake units, and a marsh area. Two landfills, the Old Brine Sludge Landfill and the New Brine Sludge Landfill, are located at the south central portion of the property and occupy a combined area of approximately 7 acres. Three waste lake units, Waste Lakes 1, 2, and 3, are located at the central and eastern portion of the property and occupy a combined area of approximately 53 acres. The landfills and waste lakes are no longer used for disposal purposes. They have been capped and are overgrown with natural grass and/or phragmites. The remainder of the property consists of a marsh area between the plant process area and Red Lion Creek.

Red Lion Creek, a tributary of the Delaware River, and surrounding marsh lie immediately north of the eastern portion of the property. Two commercial packaging and transport companies, Chloromone and Oriole Chemical Carrier, lie immediately north on the western portion of the property between the plant and the marsh. The east side of the property is bounded by the Delaware River. Keneka of Delaware, Inc., (formerly Georgia Gulf) which operates the PVC plant, is located to the immediate South, and Metachem is located to the west.

Red Lion Creek is a small tidal tributary to the Delaware River that discharges through tide gates to the Delaware River (Mile 62). The 100-year flood plain in this area is 10 feet above mean sea level. The flood plain in this area is currently protected against tidal fluctuations of the Delaware River by a dike and tidal gate. The plant process area and all waste management areas are diked and outside of the 100-year flood plain.

The portion of the river near the Site is considered the Brackish Upper Estuary. The salinity of the river varies seasonally. During periods of high river flow, which usually occur in the spring, the river has been freshwater as far south as the Chesapeake and Delaware Canal, approximately 3.5 miles downstream of the facility (River Mile 58.5). During droughts, saline water has reached Philadelphia, approximately 25 miles upstream.

The natural shoreline of this section of the river was once predominantly tidal marshes. The Brackish Upper Estuary was a transition zone between freshwater and brackish water species. Above the marshes at higher elevations, dense coastal forests and forested wetlands were present. This forest has largely been removed and converted to agricultural, residential, commercial, and industrial uses, but remnants remain. Likewise, the tidal marshes have been altered to support development.

2.2 HISTORICAL SITE DESCRIPTION

The plant began operation in 1965 under the ownership of Diamond Alkali, and has since undergone several name changes and one ownership change. The plant was owned by Diamond Shamrock Corporation when its waste facilities were permitted by the State of Delaware Department of Natural Resources and Environmental Control (DNREC) in 1979 under Solid Waste Permit SW-79/13. The ownership of the plant was transferred to OxyChem in 1986. The following provides a description of historical plant use including the plant process area, landfills and waste lake units.

Plant Process Area

Since 1965 when the Plant was built and operated by Diamond Shamrock, it has manufactured chlorine, hydrogen, and sodium hydroxide by the electrolysis of NaCl brine. A potassium hydroxide production unit was added to the plant in 1996. From 1966 to April 1982, the Plant also operated a polyvinylchloride (PVC) plant, which manufactured homopolymer resins. This PVC plant is located south of the chlorine production area and is currently owned by Kaneka of Delaware. Prior to the development and permitting of wastewater treatment facilities at the Delaware City Plant, and disposal of solid wastes at an off-site facility, solid wastes from the chlorine and PVC production processes were placed in disposal impoundments (landfills) and process effluent was settled in lagoons (waste lakes) at the site.

Waste Lake No. 1

Waste Lake No. 1 (WL-1) is a 2.3 acre triangular shaped landfill on the north side of the facility, adjacent to, and south of, Red Lion Creek. It is no longer in use and in 1979 was dewatered and capped with 12 to 24 inches of clay and 4 inches of topsoil.

From 1965 to 1970, WL-1 received influent containing PVC solids, barium sulfate, calcium sulfate, carbonates, chlorides, and mercury, in various states and forms. Waste-stream flows to the lake included caustic railroad tanker and truck washings, cooling tower blowdown and other general facility washdowns. In the fall of 1970, the influent was reduced to a sodium hydrosulfide treated mercury contaminated wastewater stream and the influent from MetaChem. The unit had a waste capacity of approximately 35,000 cubic yards.

From summer 1965 to spring 1971, WL-1 was also used as a flow-through basin by Metachem, which discharged wastewaters from its chlorobenzene process to the Delaware River. OxyChem did not provide treatment for this wastewater, but merely a flow channel to allow Metachem access to the Delaware River through WL-1 and the overflow channel.

Historical investigation data indicates that several constituents have migrated from WL-1 via groundwater to the northwest and are bound in the silty clay sediments and peat deposits in the marsh adjacent to this unit.

Waste Lake No. 2

Waste Lake No. 2 (WL-2) is a 48-acre lagoon in the northeast corner of the facility, just east of WL-1. It is bordered on the east by the Delaware River and on the north by Red Lion Creek. This unit had a volume of approximately 240 acre-feet, with a depth that varied from 2 to 10 feet.

Prior to the end of 1970 it was used by Motiva as Delaware River as a dredge disposal area. From 1965 to 1977, WL-2 primarily received stormwater runoff from surrounding areas and overflow wastewater from WL-1. WL-2 also served as a water retention and evaporation lagoon and a "no discharge" lagoon to store treated facility wastewater. In the late 1960s, solid wastes from WL-1 were placed in the southwest corner of WL-2 to enable additional solids settling in WL-1. In the early 1970s, PVC solids were discharged directly into the Southwest Corner of WL-2. Process water from Metachem was also

channeled through the unit from 1971 to 1973. During the period of 1977 to 1983, WL-2 was drained under an NPDES permit and dried. A soil cap was completed in 1983. Several areas within this unit were sampled during Phase I and showed elevated total VOC and SVOC concentrations.

Waste Lake No. 3

Waste Lake No. 3 (WL-3 or PVC Landfill) is a 3.1-acre elongate shaped landfill located approximately 200 feet southwest of WL-1. From 1970 to 1982, WL-3 received approximately 35,000 cubic yards of wastes from the PVC processing area. A low-permeability soil cap was completed in 1982.

From 1982 to 1988, post-closure requirements required monitoring pursuant to a DNREC solid waste permit. No chemicals of concern were detected during the monitoring program.

Old Brine Sludge Landfill

The Old Brine Sludge Landfill (OBSL) is a 3.2-acre landfill located directly east of the facility processing plant and approximately 20 feet south of WL-3, at its west end. This unit is situated between two railroad spurs in a former channel of a small, northward flowing tributary of Red Lion Creek.

From 1970 to 1979, the OBSL received approximately 32,000 cubic yards of wastes that consisted of mercury-laden brine sludges. These wastes resulted from the removal of inorganic impurities during electrolysis of the salt brine solution. The unit was closed and capped in 1979. In 1983, an EPA evaluation determined that no actions were required at the unit under CERCLA.

New Brine Sludge Landfill

The New Brine Sludge Landfill (NBSL) is located south of the OBSL. It is separated from the OBSL by a railroad berm and roadway. This unit is a closed RCRA unit, consisting of two landfill cells, which cover a combined area of approximately 4 acres with an average depth of 8 feet. Cells 1 and 2 are separated and completely contained by synthetic liners.

The wastes were similar to those disposed of in the OBSL, which consisted of mercury brine sludges resulting from the removal of inorganic impurities during electrolysis of the salt brine solution. The NBSL received waste from 1979 to 1988. An engineered RCRA-type cap was completed for this SWMU in 1992.

Review of Aerial Photographs

A review of four aerial photographs from 1937, circa 1960, 1976, and 1985 provides a chronology showing the facility site prior to construction through the operation and then closure of many of the SWMUs. A summary of each photograph is provided below.

- 1937 - At this time, the site is occupied by a farm with cultivated fields. Tide gates are present at the confluence of Red Lion Creek and the Delaware River and appear functional. There is open water at all the future SWMU locations except the Chemfix Test Unit and the NBSL. There is a tributary stream to Red Lion Creek in the present location of the NBSL. This tributary flows into an arm of Red Lion Creek that is located in the region of the OBSL and WL-3. The locations of WL-1 and WL-2 are part of Red Lion Creek. There is a sand bar between WL-1 and WL-2.
- circa 1960 - The farm is still in existence; however, much of the open water occupying the future SWMU locations, approximately 75 acres, is filled with dredge spoils. The dredge spoil areas are covered with vegetation and are separated from Red Lion Creek by a series of dikes and access roads. A sand bar present in the previous photograph is more pronounced. The Tidewater Refinery, now Motiva, can be seen to the south of the Site.
- 1976 - The OxyChem Facility is present at this time. WL-1, WL-2, WL-3, the OBSL, and the Chemfix Test Unit are all in operation. The Former Storm Drainage Pond is also present. The white areas in WL-2 may be waste PVC solids that were discharged in the early 1970s. The extent of Red Lion Creek remains essentially unchanged from the previous photograph. The sand bar present in the previous photographs appears to have been buried by more sediment.
- 1985 - All SWMUs present in the previous photograph, WL-1, WL-2, WL-3, the OBSL, and the Chemfix Test Unit, are all closed at this time. The NBSL is present and has one closed cell (Cell 1) and one active cell (Cell 2). The Motiva land farm is present just south of the NBSL. This facility was not present in the previous

photograph. Red Lion Creek appears darker than it did in the previous photograph, which indicates the creek is deeper. At this time, the tide gate (seen in the upper right corner of the photograph) appears to be washed-out and Red Lion Creek was receiving water from the Delaware River.

The dike was repaired in 1987. Since that time Red Lion Creek has not been subject to tidal influences. The tide gate serves to let water flow from Red Lion Creek to the Delaware River, but does not allow river water to enter the creek.

3.0 CURRENT SURROUNDING LAND USE

3.1 LAND USE

The facility is located in a heavily industrial area north of the intersection of Delaware Routes 72 and 9 (Clark's Corner Road and River Road). Several other industrial plants to the south and southwest adjoin the facility property. Keneka of Delaware, Inc., which operates the PVC plant, is located to the immediate South, and Metachem is located to the west. Two commercial packaging and transport companies, Chloromone and Oriole Chemical Carrier, lie on the immediate northern boundary of the facility. These companies handle chlorine and caustic products produced at the Delaware City Plant. Motiva operates a large oil and petrochemical refinery south of the facility. It owns a dredge material storage area east and south of OxyChem's Plant, a landfill, and land treatment are and two flyash disposal impoundments. A "landfarm" area east of OxyChem's disposal impoundments is part of the Motiva property.

Outside of the industrial portion lies agricultural and wetlands areas. The nearest residential area is over 1.5 miles northwest of the facility. It has been estimated that there are 2,000 people within a four-mile radius of the plant due mainly to the presence of local industry. There is an extensive band of open space used as a wildlife refuge along the Chesapeake and Delaware Canal 3 miles south of the facility. There are also dredge spoil areas along the canal and Delaware River, which are owned and maintained by the U.S. Army Corps of Engineers. A land use map for the area around the facility is presented in Figure 3.

3.2 ERIIS DATABASE SEARCH

Environmental Risk Information and Imaging Services (ERIIS) was contracted to conduct a search of federal and state environmental databases based on the address of the Site. The database searches were completed to assist in the identification of conditions at the Site and within a radius distance specified in ASTM Standard E1527-97. The following databases were searched with the findings as noted:

3.2.1 FEDERAL DATABASES

1. National Priority List (NPL) - The NPL is a United States Environmental Protection Agency (USEPA) listing of the nation's worst uncontrolled or abandoned

hazardous waste sites. NPL Sites are targeted for possible long-term remedial action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. In addition, the NPL Report includes information concerning cleanup agreements between the USEPA and potentially responsible parties, any liens filed against contaminated properties, as well as the past and current USEPA budget expenditures tracked within the Superfund Consolidated Accomplishments Plan (SCAP).

FINDING: The Site was not reported to be on the NPL. Two sites Metachem, a manufacturer of chlorinated solvents, and Tybouts Corner Landfill, a former municipal solid waste landfill are located within a one-mile radius of the Site were reported to be on the NPL. These sites are located, upstream along Red Lion Creek. These sites are known to have released contaminants into Red Lion Creek upstream from the OxyChem property. Metachem had releases of chlorinated benzenes in 1981 and 1986. They flowed onto the ground surface and into an unnamed tributary, which discharges to Red Lion Creek. Tybouts Corner Landfill is located near the headwaters of Red Lion Creek. A Remedial Investigation conducted in 1984 showed the landfill was releasing VOC constituents to Red Lion Creek.

2. **Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)** - The CERCLIS List is a comprehensive listing of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated or are currently under investigation by the USEPA for the release or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation and may ultimately be placed on the NPL. In addition to site events and milestone dates, the CERCLIS List contains financial information from the SCAP. As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" have been removed from the CERCLIS List.

FINDING: The Site was not reported to be on the CERCLIS List. No sites within a half-mile radius of the Site were reported to be on the CERCLIS List.

3. **No Further Remedial Action Planned (NFRAP) Sites Report** - The NFRAP Sites Report, also known as the CERCLIS Archive, contains information pertaining to sites which have been removed from the USEPA's CERCLIS Database. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund action or NPL consideration.

FINDING: The Site was not reported to be listed in the NFRAP Sites Report. No sites within a half-mile radius of the Site were reported to be listed in the NFRAP Sites Report

4. **Resource Conservation and Recovery Information System - Non-Corrective Action Treatment, Storage and Disposal (TSDs) Facilities (RCRIS-TS) Report** - The RCRIS-TS Report contains information regarding those facilities that either treat, store or dispose of USEPA regulated hazardous waste. The following information also is included in the RCRIS-TS Report: information regarding the status of facilities tracked by the Resource Conservation and Recovery Act (RCRA) Administrative Action Tracking System (RAATS); inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; and a complete listing of USEPA regulated hazardous wastes which are generated or stored on-site.

FINDING: The Site was not reported to be listed in the RCRIS-TS Report. No sites within a half-mile radius of the Site were reported to be listed in the RCRIS-TS Report.

5. **Resource Conservation and Recovery Information System - TSDs Subject to Corrective Action (RCRIS-CA) Report** - The RCRIS-CA Report contains information pertaining to hazardous waste TSD facilities which have conducted, or are currently conducting corrective actions as regulated by the Resource Conservation and Recovery Act. The following information also is included in the RCRIS-CA Report: information regarding the status of facilities tracked by the RAATS; inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed

and actual penalties; information pertaining to corrective actions undertaken by the facility or the USEPA; and a complete listing of USEPA regulated hazardous wastes which are generated or stored on-site.

FINDING: The Site was not reported to be listed in the RCRIS-CA Report. No sites within a one-mile radius of the Site were reported to be listed in the RCRIS-CA Report.

6. **Resource Conservation and Recovery Information System - Large Quantity Generators (RCRIS-LG) Report** - The RCRIS-LG Report contains information regarding facilities that either generate more than 1,000 kilograms (kg) of USEPA regulated hazardous waste per month or meet other applicable requirements of RCRA. The following information also is included in the RCRIS-LG Report: information regarding the status of facilities tracked by the RAATS; inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; information pertaining to corrective actions undertaken by the facility or the USEPA; and a complete listing of USEPA regulated hazardous wastes which are generated or stored on-site.

FINDING: The Site was not reported to be listed in the RCRIS-LG Report. No sites within a quarter-mile radius of the Site were reported to be listed in the RCRIS-LG Report.

7. **Resource Conservation and Recovery Information System - Small Quantity Generators (RCRIS-SG) Report** - The RCRIS-SG Report contains information regarding facilities that either generate between 100 kg and 1,000 kg of USEPA regulated hazardous waste per month or meet other applicable requirements of RCRA. The following information also is included in the RCRIS-SG Report: information regarding the status of facilities tracked by the RAATS; inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; information pertaining to corrective actions undertaken by the facility or the USEPA; and a complete listing of USEPA regulated hazardous wastes which are generated or stored on-site.

FINDING: The Site was not reported to be listed in the RCRIS-SG Report. No adjacent sites were reported to be listed in the RCRIS-SG Report. No sites within a quarter-mile radius of the Site was reported to be listed in the RCRIS-SG Report.

8. **Emergency Response Notification System - ERNS** is a national computer database system that is used to store information on the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS reporting system contains preliminary information on specific releases, including the spill location, the substance released and the responsible party. The information in the ERNS Report pertains only to those releases that occurred between January 1, 1997 and June 11, 1997.

FINDING: The Site was listed in the ERNS. An oil spill (non-PCB) occurred on March 7, 1998 in a cement containment area. The area of impact was 30 feet by 100 feet.

9. **Toxic Release Inventory (TRI) System of 1994** - The 1994 TRI Report contains information on the industrial release and/or transfer of toxic chemicals as reportable under Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III).

FINDING: The Site was in the 1994 TRI Report due to transfers and releases of chlorine, mercury, carbon tetrachloride, sulfuric acid, hydrochloric acid, sodium hydroxide, and sodium sulfate. The following adjacent sites were also reported to be listed in the 1994 TRI Report:

Facility	Address	Substance Released/Transferred
Chloromone	1645 River Road	chlorine, sulfuric acid
Georgia Gulf Corporation	1685 River Road	vinyl chloride, hydrochloric acid, chromium compounds, ammonia, antimony compounds, di(2-ethylhexyl)phthalate, methanol, sodium hydroxide
Metachem	Governor Lea Road	ethylene glycol, hydrochloric acid, chlorine, 1,2-dichlorobenzene, 1,2,4-trichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, chlorobenzene, benzene, sodium hydroxide

10. Civil Enforcement Docket - Docket is the USEPA's System for tracking judicial cases filed on the USEPA's behalf by the Department of Justice. The Docket Report contains information on cases from 1972 to the present.

FINDING: The Site was not reported to be listed in the Docket Report. Two sites within a one-mile radius of the Site were reported to be listed in the Docket Report. Metachem located on Governor Lea Road was reported for a violation of CWA 311. The date concluded was reported to be May 20, 1987, with a penalty of \$37,500.

Tybouts Corner Landfill located US Route 13 and Delaware Route 71 was reported for a violation of the following:

Law Violated	Date Concluded	Penalty
CERCLA 106 CERCLA 104E3 CERCLA 107 RCRA 7003 CERCLA 104E7B	12/21/88	\$0 (Consent decree with cost recovery)
CERCLA 106 CERCLA 104A CERCLA 107 RCRA 7003	12/21/88	\$0 (Case combined with another case)
CERCLA 106A CERCLA 107A	4/12/90	\$0 (Consent decree with cost recovery)
CERCLA 106A CERCLA 107A RCRA 7003	10/7/91	\$0 (Consent decree with cost recovery)

3.2.2 STATE DATABASES

1. Delaware Hazardous Substance Release Sites - The Delaware Hazardous Substance Release Sites contains information concerning sites that are deemed potentially hazardous by the Delaware Department of Natural Resources and Environmental Control.

FINDING: The Site was not reported to be on the Delaware Hazardous Substance Release Sites. One adjacent site, Metachem, was reported to be listed Delaware Hazardous Substance Release Sites due to its presence on the NPL.

2. Delaware Underground Storage Tank (UST) Report - The Delaware UST Report is a comprehensive listing of all registered active and inactive USTs and ASTs located within the State of Delaware.

FINDING: The Site was not reported to be listed in the Delaware UST Report. No sites within a quarter-mile radius of the Site were reported to be listed in the Delaware UST Report.

3. Delaware Leaking Underground Storage Tank Report - The Delaware Leaking Underground Storage Tank Report is a comprehensive listing of all reported active and inactive leaking underground storage tanks located within the State of Delaware.

FINDING: The Site was not reported to be on the Delaware Leaking Underground Storage Tank Report. The following sites within a half-mile radius of the Site were reported to be on the Pennsylvania List of Confirmed Releases:

<u>Facility</u>	<u>Address</u>	<u>Substance</u>
Commonwealth Trust Co.	Rt. 13 & Hamburg Rd.	Gas/Diesel
Buena Vista Gulf	616 S. Dupont Hwy	Gasoline
Operating Engineers JATC	925 Red Lion Road	Gas/Diesel
Vern's Auto Repair	1007 Red Lion Road	Gasoline
Metachem	745 Governor Lea Road	Heating Oil
Metachem	745 Governor Lea Road	Diesel

4. Delaware Solid Waste Landfill Facilities- The Delaware Solid Waste Facilities (SWF) List contains summary information pertaining to all permitted solid waste landfills and transfer stations operating within the State of Delaware.

FINDING: The Site was not reported to be on the list of Delaware Solid Waste Landfills. No sites within a one-half mile radius of the Site were reported on this list.

4.0 POPULATION INFORMATION

Demographic information available from the U.S. Bureau of the Census has also been reviewed to characterize the resident population. Demographic data were used to identify the size and age of the locality's population, and were useful in identifying potentially sensitive populations living in the vicinity of the facility. In the immediate vicinity of the facility, the dominant land use is industrial/commercial. Rural areas lie beyond the industrial facilities, and land use in these areas is primarily agricultural. The nearest residential area is over 1.5 miles from the facility. Census figures presented below are for Tracts 164 and 165 in New Castle County. Tract 164 is bounded by Red Lion Creek, the Delaware River, the Chesapeake and Delaware Canal and Delaware Route 71. Tract 165 consists of Delaware City and small areas to the north and southwest. These data are presented to describe the rural population surrounding the facility, as well as the nearby urban population of Delaware City.

Data from the 1990 Census indicated a total of 2,456 people residing in Tract 164 and 1,682 residing in Tract 165. The 1990 Census report characterizes Tract 164 as rural (98.4%) with a predominantly white population that is relatively young. Approximately 75 percent of the population of Tract 164 and 70 percent of the population of Tract 165 are less than 45 years of age. Table 1 provides the 1990 population of Tracts 164 and 165 by age distribution.

Population projections do not exist for Tracts 164 and 165. The population for New Castle County from the 1990 census was 443,580. The population was projected to increase 9.7 percent to 486,546 by the year 2000 and 8.7 percent to 529,008 by the year 2020.

5.0 WATER USE

The OxyChem plant receives its process and drinking water from the Wilmington Suburban Water Company. It does not use site surface water or groundwater for any purpose. The major source of water in the vicinity of the site is groundwater derived from the Potomac Aquifers.

5.1 POTENTIAL GROUNDWATER SOURCES

The Site is underlain by four main unconsolidated aquifers: (1) the Columbia Formation water table aquifer, and (2) three confined aquifers within the Potomac Formation. From youngest to oldest (top down), the three Potomac Formation Aquifers are the Upper, Middle, and Lower Hydrologic Zones. Intervening clays of the Potomac Formation along with the Merchantville Formation between the Columbia and Potomac Upper Hydrologic Zone (UHZ) serve as a confining unit.

The majority of the subsurface investigation work at the Site has focused on the Columbia Formation. The primary reason for this focus is that the Columbia Formation directly underlies the Site and would be the first subsurface zone to be impacted by chemicals. This is also the case at the surrounding industrial sites. Typically, the natural quality of the Columbia Formation is often poor (e.g., color, odor, turbidity). Although the Columbia Formation yields good amounts of water, the confined Potomac Aquifers are capable of producing greater quantities. For these reasons, groundwater supplies in the area are typically derived from the lower confined Potomac Aquifers. A thick unit of low-permeability clay exists between the Columbia Formation and the Potomac UHZ. This low-permeability clay provides an impermeable barrier to the downward vertical migration of water from the Columbia Formation to the Potomac UHZ.

5.2 GROUNDWATER USAGE

A well inventory was conducted to identify wells completed in the Columbia and Potomac Aquifers. This well inventory included an evaluation of DNREC and DRBC records and a review of previous nearby industrial investigations. Large volume withdrawals (> 100,000 gallons per day) were evaluated from 1995 DNREC and DRBC records.

5.2.1 COLUMBIA FORMATION

Five residential wells have been identified that tap the Columbia Aquifer within three miles of the facility (ERM's Draft Background Data Review Report, September 15, 1989). These wells serve approximately 19 people. However each of these wells is located north of Red Lion Creek, which acts as a hydrogeologic barrier to preclude any potential impacts to these wells from the OxyChem site. Hydraulically upgradient of the Delaware City facility, Motiva, and Metachem operate recovery wells in the Columbia Formation as part of ongoing remediation systems. Motiva has three recovery wells that pump a total of 120 gallons per minute (gpm) and Metachem as four 30 gpm recovery wells. These wells are used for the non-contact remediation of contaminated groundwater only. In addition, they do not influence the flow of groundwater in the Columbia Formation at OxyChem's facility.

5.2.2 POTOMAC FORMATION

Figure 4 shows the location of the large volume groundwater withdrawals from the Potomac Aquifers in the vicinity of the Site. Table 4 provides a list of the large volume groundwater withdrawals from the Potomac Aquifers in the vicinity of the Site. Both Figure 4 and Table 2 are based on actual 1995 DRBC withdrawal records, not permitted water allocations that may overestimate or underestimate actual usage. In addition, Potomac Formation hydrologic zone breakdowns for these withdrawals are also provided.

In the vicinity of the site, the majority of potable, industrial, commercial, and agricultural water use is derived from the Potomac Aquifers. The majority of withdrawals are from the middle hydrologic zone (MHZ) and lower hydrologic zone (LHZ) of the Potomac Formation. Wells tapping the deeper MHZ and LHZ have an even less chance of being impacted by the Columbia Aquifer than the UHZ due to intervening impermeable clays that separate these zones.

The major users of groundwater from the Potomac Aquifers in the region are: Motiva Refinery located immediately south of the plant; Delaware City, located approximately three miles southeast of the plant; and, several water companies located north and west of the plant. The largest of these water companies is the Artesian Water Company.

The only production wells located in the Potomac Formation Aquifers within three miles of the Site are used by Motiva and Artesian Water Company. The nearest production well on the Motiva property is approximately 4,620 feet away and taps the LHZ of the Potomac. The second nearest well on the Star property is approximately 1.1 miles away and taps the MHZ. The nearest Star production well tapping the UHZ is approximately 3 miles south of the Site. All Star production wells are used for non-contact industrial purposes only. The nearest Artesian Water Company drinking water supply well is one mile northeast of the Site.

5.3 POTENTIAL SURFACE WATER SOURCES AND USERS

Chloride concentrations in excess of 250 mg/l preclude the use of Delaware River water as a drinking water supply. The only known user of surface water within three miles of the OxyChem site is Star, which treats Delaware River water for non-contact industrial purposes. Star has also pumped water from Red Lion Creek.

Red Lion Creek and the Delaware River are secondary and primary recreation waters, respectively. The Delaware River is also a navigable body of water used for transportation.

6.0 PROJECTED FUTURE USE

The projected future use of the Plant and large area surrounding the plant is for industrial purposes. The Delaware City, Delaware Plant has been in operation since it was built in 1965 and is likely to remain an industrial facility. The Site is located in the middle of a large area consisting of heavy industry and commercial facilities to support the industry (e.g., transportation). Furthermore, the long time use of the Plant and surrounding area for heavy industry has led to a state of almost ubiquitous soil and shallow groundwater contamination. For these reasons, the concept of a residential area supplanting this heavy industrial area is not practical in the near or long term. In order for a residential area to supplant the present heavy industrial area, all or most of the sites would have to be remediated to residential standards. This conclusion is consistent with EPA policy, which recognizes that RCRA facilities typically are industrial properties that are actively managed. EPA states the following example in the OSWER Directive No. 9355.7-04: "Future industrial land use is likely to be a reasonable assumption where a site is currently used for industrial purposes, is located in an area where the surroundings are zoned for industrial use, and the comprehensive plan predicts the site will continue to be used for industrial purposes."

At this time, OxyChem plans to continue operation of the plant for the purpose of manufacturing chlorine into the foreseeable future. With regard to site-specific environmental issues, OxyChem plans to implement appropriate deed restrictions, engineering controls, and institutional controls, as required. Furthermore, the site may be divided into subsections allowing for various degrees of remediation. For example, deed restrictions and institutional controls may allow the manufacturing area to remain industrial.

Current groundwater usage in the surrounding area is also likely to continue. The Potomac Aquifers will be used as the major source of water. Use of the Columbia Aquifer for residential water supplies may continue. Presently all residential users of the Col aquifers are located north of Red Lion Creek, which acts as a hydrogeologic barrier to preclude any potential impacts to these wells from the OxyChem site. Future residential development in the area, if any, would likely be served by a public water

system deriving its water from the Potomac Aquifers or transmitted from another distant source via a pipeline. Pumping of the Columbia Aquifer to the south and west by Motiva and Metachem for remediation purposes does not influence groundwater at the OxyChem site. Therefore any residential development in these directions also would not. Continued pumping of the Columbia Formation by these facilities is not expected to influence the groundwater flow in the Columbia Formation at the OxyChem site, which is to the north with discharge to Red Lion Creek.

7.0 CONCLUSIONS

Based on the information presented in this justification document, OxyChem concludes that a non-residential use scenario is appropriate for site soils and groundwater. Part 1 of the Phase III risk assessment will be a pathway analysis for on-site areas of the facility. Under a Corrective Action program, exposure points along each pathway will be eliminated through institutional or engineering controls. As a component of this analysis, OxyChem will assume a non-residential use scenario for site soils and groundwater.

FIGURES

Figure 1
Site Location Map
Occidental Chemical Corporation
Delaware City, Delaware

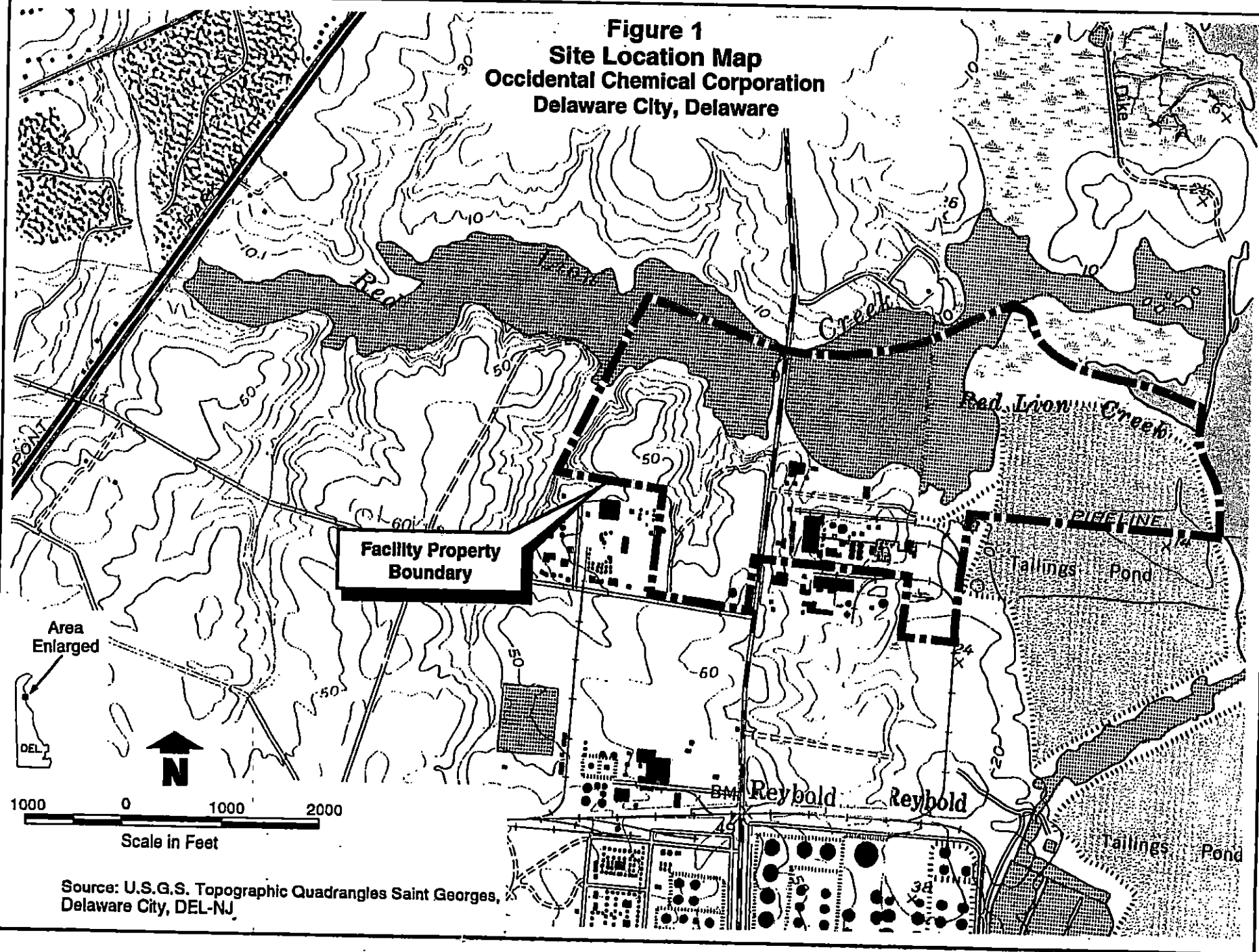
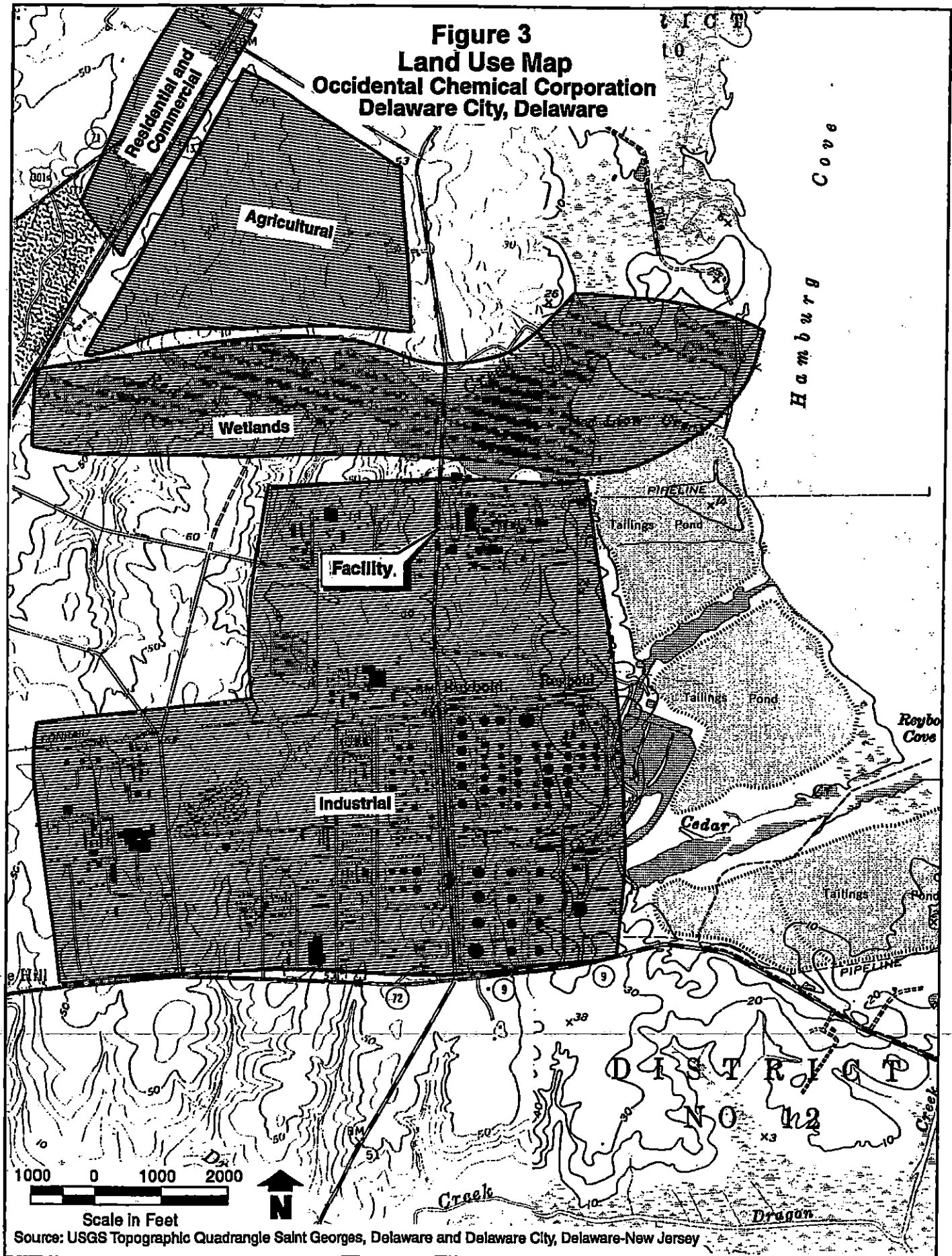


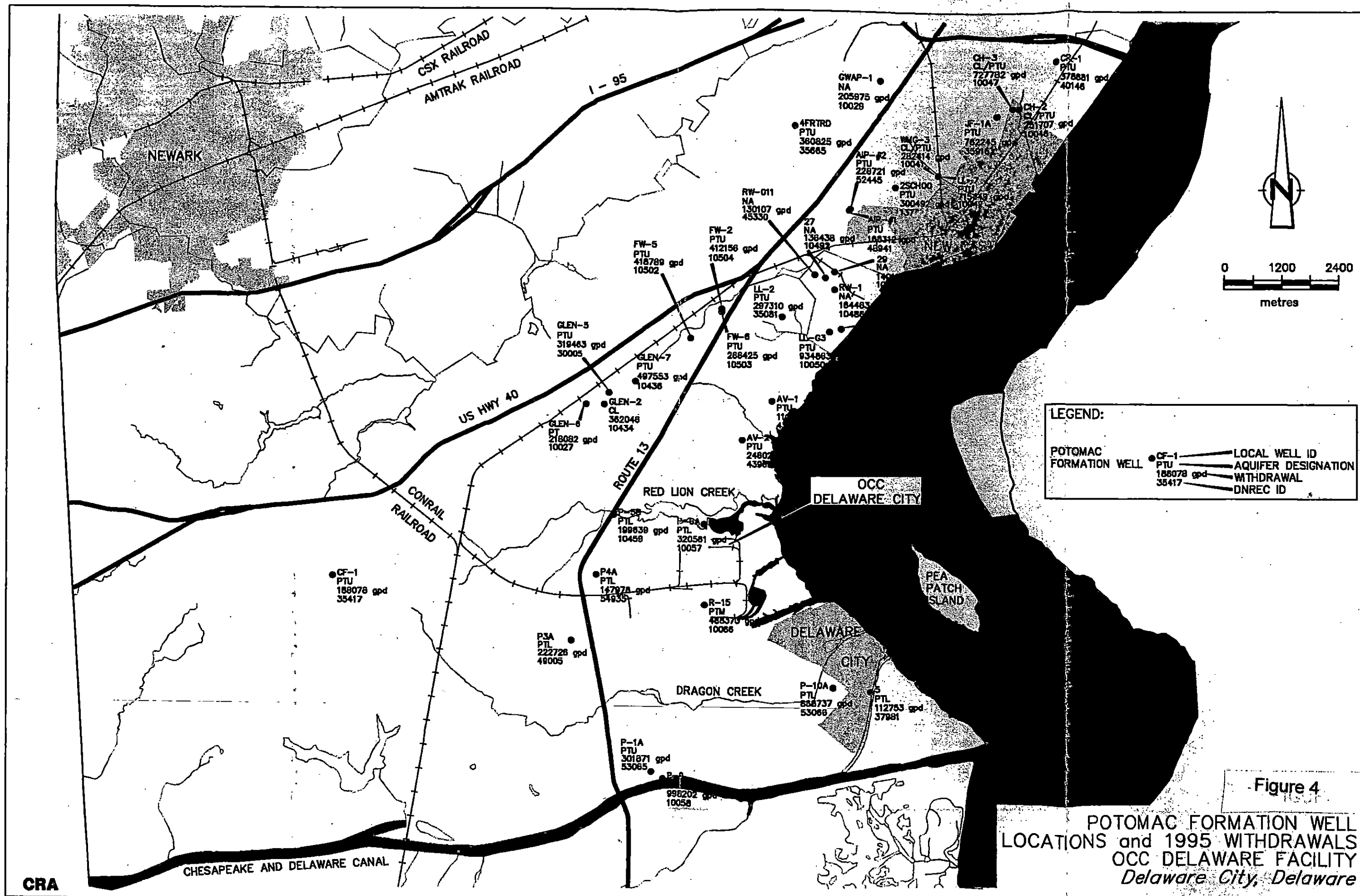
Figure 2
Site Facilities Map
Occidental Chemical Corporation
Delaware City, Delaware

Legend

- Property Boundary
- Comp Monitoring Well Location
- Shallow Monitoring Well Location
- Overburden Monitoring Well Location
- Parking Lot
- Office Building
- Cell House
- Cell Control Room
- Maintenance Building
- Waste Water Treatment Facility
- Process Tank
- Chemical Warehouse
- Storage Tank
- Brine Storage Pond
- Salt Storage Pond
- Cooling Towers
- Reservoir
- Refinery Warehouse
- Process Building

Figure 3
Land Use Map
Occidental Chemical Corporation
Delaware City, Delaware





TABLES

TABLE 1**1990 POPULATION OF TRACTS 164 AND 165 BY AGE DISTRIBUTION**

<i>Age</i>	<i>Tract 164</i>	<i>Tract 165</i>
<1	27	12
1-2	56	50
3-4	93	48
5	21	3
6	54	17
7-9	72	47
10-11	87	90
12-13	108	55
14	35	34
15	32	20
16	22	40
17	66	26
18	34	39
19	0	21
20	76	18
21	40	1
22-24	49	83
25-29	245	156
30-34	245	111
35-39	207	144
40-44	274	150
45-49	168	93
50-54	54	85
55-59	79	86
60-61	37	23
62-64	48	33
65-69	77	41
70-74	39	49
75-79	54	53
80-84	48	41
85 and over	9	13

TABLE 2
DNREC WATER USE DATA - 1995

Owner	DNREC ID	LOCAL ID	Longitude	Latitude	Aquifer	Annual Total 1,000s GPM	Average Daily Withdrawal GPD
ARTESIAN	010027	GLEN 6	753936	393735	PT	79,600.0	218,082
ARTESIAN	010029	GWAP 1	753522	394116	NA	75,181.0	205,975
ARTESIAN	010041	WMG 3	753430	394013	CL/PTU	103,081.0	282,414
ARTESIAN	010046	CH 2	753322	394058	CL/PTU	91,873.2	251,707
ARTESIAN	010047	CH 3	753327	394058	CL/PTU	265,640.5	727,782
ARTESIAN	010049	LL 7	753430	394013	PTU	261,139.0	715,449
ARTESIAN	010050	LL G3	753604	393826	PTU	341,225.0	934,863
ARTESIAN	010052	LL K1	753554	393828	CL/PTU	90,128.0	246,926
ARTESIAN	010434	GLEN 2	753920	393735	CL	132,146.9	362,046
ARTESIAN	010436	GLEN 7	753853	393751	PTU	181,606.8	497,553
ARTESIAN	010502	FW 5	753805	393821	PTU	152,858.0	418,789
ARTESIAN	010503	FW 6	753738	393839	PTU	97,245.0	266,425
ARTESIAN	010504	FW 2	753738	393841	PTU	150,437.0	412,156
ARTESIAN	030005	GLEN 5	753916	393743	PTU	116,604.0	319,463
ARTESIAN	035081	LL 2	753645	393836	PTU	108,518.0	297,310
ARTESIAN	035417	CF 1	754316	393536	PTU	68,648.3	188,078
ARTESIAN	035916	JF 1A	753340	394053	PTU	278,219.4	762,245
ARTESIAN	040146	CP 1	753250	394129	PTU	138,218.7	378,681
ARTESIAN	043068	FW4R	NA	NA	PTU	118,164.0	323,737
ARTESIAN	043962	AV 1	753653	393738	PTU	419,239.0	1,148,600
ARTESIAN	043963	AV 2	753719	393711	PTU	89,798.4	246,023
ARTESIAN	048941	AIP #1	753548	393949	PTU	61,434.0	168,312
ARTESIAN	052445	AIP #2	753547	393950	PTU	83,483.0	228,721
DELAWARE CITY	037981	5	753527	393419	PTL	41,155.0	112,753
NEW CASTLE BWL	000137	2SCHOO	753508	394005	PTU	109,679.4	300,492
NEW CASTLE BWL	035665	4FRTRD	753635	394045	PTU	131,701.0	360,825
NEW CASTLE COUN	010486	RW 1	753600	393855	NA	60,029.0	164,463
NEW CASTLE COUN	010492	27	753608	393903	NA	49,800.0	136,438
NEW CASTLE COUN	010494	29	753600	393907	NA	51,146.0	140,126
NEW CASTLE COUN	045330	RW-011	753617	393905	NA	47,489.0	130,107
STAR ENTERPRISE	010057	P-6A	753752	393613	PTL	117,004.6	320,561
STAR ENTERPRISE	010058	P-9	753827	393320	PTL	364,343.6	998,202
STAR ENTERPRISE	010066	R-15	753751	393518	PTM	178,256.1	488,373
STAR ENTERPRISE	010459	P-5B	753911	393619	PTL	72,868.4	199,639
STAR ENTERPRISE	049005	P3A	753948	393453	PTL	81,295.0	222,726
STAR ENTERPRISE	053065	P-1A	753837	393325	PTU	110,182.9	301,871
STAR ENTERPRISE	053066	P-10A	753559	393422	PTL	317,089.1	868,737
STAR ENTERPRISE	054935	P4A	753926	393538	PTL	54,012.1	147,978

CL - COLUMBIA

PT - POTOMAC

PTU - POTOMAC UPPER

PTM - POTOMAC MIDDLE

PTL - POTOMAC LOWER

NA - NOT AVAILABLE

APPENDIX G

INVESTIGATION PROGRAM

APPENDIX G

INVESTIGATION PROGRAM FIELD PROCEDURES

This appendix provides details regarding the field procedures used during the Phase II investigation program. The work was conducted in accordance with the Scope of Work for the Phase II field activities, the Quality Assurance Project Plan (QAPP), the Data Management Plan, the Health and Safety Plan HASP), and the Community Relations Plan provided in the Phase II Work Plan.

G.1 GROUNDWATER MEASUREMENTS

Water level measurements were collected synoptically at both high and low tide periods. Teams of two to three people were used to collect the measurements in as short a timeframe as possible. An electronic depth to water meter was used to obtain the water level measurements. All electronic water level recorders were standardized at the start of each event. In addition, optical interface probes were used to detect the presence of NAPL in wells with the potential to be in proximity to NAPL, primarily Waste Lakes 1 and 2. Note that water level measurements were also collected prior to and during groundwater sampling at each well.

G.2 DRILLING AND SUBSURFACE INVESTIGATION METHODS

G.2.1 WELL INSTALLATION

Phase II monitoring wells were installed using the hollow stem auger method. Split-spoon samples were collected continuously and visually logged. A PID was used to monitor the well boring headspace and spoon samples. Solid and aqueous cuttings were drummed and staged onsite prior to proper offsite disposal.

Monitoring wells were installed utilizing 6-5/8-inch I.D. hollow stem augers. A plug was used at the base of the augers during drilling to prevent running sands from entering the augers, thus allowing proper installation of the well screen and riser. Each monitoring well was installed with 4-inch-diameter, 0.010 slot, PVC screen; the typical screen length was 10 feet. An appropriate length of 4-inch diameter, schedule 40, flush coupling PVC casing was inserted to extend from the top of the screen interval to the

ground surface. No glue was used in joining screen and casing sections to preclude the potential for analytical interference.

A graded sand pack was placed in the annulus around the well screen to a height of approximately 2 feet above the screened interval. A 2-foot thick bentonite seal was placed above the sand pack and the remainder of the annular space was filled with a cement/bentonite grout. Each well was completed by cementing in place a cast-iron standpipe with a locking cap. The cement was mounded slightly around the stand-pipe so as to promote stormwater drainage away from the well.

Following monitoring well installation, all new wells were developed. The objective of well development was to remove sediments from the bottom of the well and screen interval. Development of wells was accomplished by using a surge and bail/pump technique. Each new well was developed until the purge waters reach turbidity readings of 5 NTUs. Purge water resulting from well development was contained on site pending analysis prior to offsite disposal.

Upon completion of all monitoring wells, each deep monitoring well was geophysically logged using a gamma logging tool.

G.2.2 STREAM PIEZOMETER INSTALLATION

The stream piezometers (also known as well points) are 1-inch diameter PVC tubes approximately 5 feet in length with a 4-foot section of perforation. They were installed to a maximum depth of 10 feet in the sediments beneath the creek. An air percussion hammer was used to install the piezometers. A Delaware licensed surveyor surveyed all piezometers as to location and elevation of top of casing.

G.3 SAMPLING PROCEDURES

The numbers of samples, locations, and rationale for each sample media to be collected are presented in Section 2.2 of this Report. Please refer to Section 2.2 for this information. Procedures associated with the surface soil, subsurface soil, surface water, sediment and ground water sampling are described in this section.

G.3.1 SURFACE SOIL SAMPLING

Surface soil samples to a depth of 12 inches and sediment samples at the surface from the drainage channels were collected using a hand-driven bucket auger or a stainless steel trowel. The soil samples were removed from the bucket auger using a pre-cleaned stainless steel scoop or spoon. Soil samples collected using the bucket auger or stainless steel trowels were placed directly into the sample container by tightly packing the sample into the container to minimize headspace. Appropriately sized volumes were transferred to a one-liter laboratory-cleaned glass jar, and the geologist logged a visual description of the soil.

G.3.2 SUBSURFACE SOIL SAMPLING

Subsurface soil samples (greater than 1 foot in depth) were collected during the boring program with a soil drill rig. Samples were split into appropriate containers for field screening and chemical laboratory analysis. The soil samples for laboratory analysis were procured from the split-barrel using a stainless steel spatula. The samples for VOC analysis were placed immediately into 4-ounce laboratory-cleaned glass jars and packed to minimize headspace. All cuttings were drummed and staged onsite pending disposal characterization and offsite disposal. Each boring was grouted with a bentonite slurry grout.

G.3.3 GROUND WATER SAMPLING

Prior to sample acquisition, each monitoring well was evaluated using an interface probe at both the top and bottom of the water column to determine if a non-aqueous phase is present. Following the interface evaluation, depth-to-water measurements were made and recorded to 0.01 feet.

Ground water sampling and purging using low flow pumps was performed in accordance with the Ground Water Sampling Standard Operating Procedures found as Attachment 1 of the Phase II Work Plan. Ground water samples collected for dissolved metals analysis were field filtered through a 0.45 μ m pore size filter prior to preservation to allow determination of dissolved metals. The samples were filtered directly into the sample container with necessary preservation already added.

Field measurements for pH, specific conductance, and temperature were obtained on ground water samples immediately following sample collection. Grab samples collected

in a beaker were used to obtain these measurements. All measurement probes were rinsed with distilled water between samples.

G.3.4 MARSH SEDIMENT CORING

EPA's June 19, 1998 approval letter for the Phase II RFI Work Plan included a request for information on how sediment core sample integrity will be maintained during collection of sediment samples for VOC analyses (Comment No. 16). The sample collection methodology was provided to EPA in a letter dated December 16, 1998, and is summarized below.

In order to minimize sample disturbance and maintain the integrity of the sample for chemical analyses, two aluminum cores were collected at each location. The first core was retrieved and split longitudinally. The core was logged and screened with a PID and Sudan IV dye. The second core was then cut open and samples for chemical analysis were collected from the interval exhibiting the highest PID response and/or response to the dye from the first core. At one point prior to the sampling, it was agreed to collect the sample from the second core by cutting a section of core with a core cutter, capping both ends of the sample, and sending it to the lab. This methodology was not used after it was determined that the laboratory would have to cut open the core and place the sample in the lab bottles prior to analysis. Furthermore, there was the risk that not enough sample volume would be sent from the field to the lab using this methodology.

G.3.5 SURFACE WATER SAMPLING

Surface water samples were collected by boat or, if impractical, a person wading to the sample location. The water samples were collected at mid-depth by immersing a laboratory-cleaned glass jar (using a sub-surface grab sampler sampling tool as necessary) below the surface of the water and transferring the water to the appropriate sample container(s). A separate clean glass jar was used as the sampling tool at each station to eliminate potential cross-contamination.

Field water quality parameters such as pH, dissolved oxygen, specific conductivity, and temperature were measured in-situ at each sampling station. A visual assessment of watercolor, and odor (total suspended solids were analyzed by the laboratory to provide an indication of turbidity) were made upon collection of all surface water samples.

A fluorescent painted plastic stake was placed along the stream bank at each station and labeled with the station number. A licensed surveyor determined the longitude and latitude of each sampling point.

G.3.6 SEDIMENT SAMPLING

Sediment samples were collected at locations corresponding to surface water sample location, as described above. The samples were collected using a boat, or if impractical, by a person wading to the sample location. Sediment samples were collected from the sediment bed surface to a maximum depth of 12 inches.

In shallow water, samples were collected using a thin-wall tube auger. If the water column above the sediments at the sample location is flowing or greater than 4 inches in depth, a thin-wall tube auger were used to collect the sample to minimize washing of the sediment as it was retrieved. Standing water from the top of the sampling tool was decanted off prior to withdrawing the sediment. In all cases, a decontaminated stainless steel trowel was used to transfer the sample into the stainless steel bowl or directly into the sample container.

Samples to be analyzed for VOCs were placed directly from the corer into the sample container by tightly packing the sample into the container to minimize headspace. For all other analyses, stream sediments were placed into a decontaminated stainless steel bowl, homogenized using a stainless steel trowel, then transferred into the appropriate sample containers. The samples were placed in laboratory-cleaned, appropriately labeled, bottles with Teflon lined septa, depending on the analysis to be performed.

A fluorescent painted plastic stake was placed along the stream bank at each station and labeled with the station number. A licensed surveyor determined the longitude and latitude of each sampling point.

G.3.7 STREAM PIEZOMETER SAMPLING

Stream piezometers were sampled using a peristaltic pump because of the limited water column present in the 1-inch diameter well points. The pump intake tube was carefully lowered into the well point to minimize disturbance of sediment. Due to the low yield of the piezometers, the samples had to be collected over several days. The first day one

volume was purged from each piezometer. On subsequent days one volume was collected from each piezometer, placed in the appropriate sample jar(s), and placed in a cooler. When an appropriate volume had been obtained for a given group of analytical parameters, the samples were submitted to the laboratory for analysis.

Figure 3-7 Quality Assurance Audit Form
Occidental Chemical Corporation, Delaware City, Delaware

Project: OxyChem-Delaware City WO Number: 7462

Date: As work was performed

Auditor(s): Bryan Foulke

On-Site Sampling Personnel: D. Tyrann, A. Williams, D. Steiner,
J. Rabie, J. Raner, A. Kisiel

Audit Conducted on the following:

Soil Sampling

Surface Water/Sediment

Ground Water

Decontamination

Y = Yes

N = No

N/A = Not Applicable

N/D = Not Determined

Sample Collection:

Do sampling locations agree with those specified in the Work Plan/Sampling Plan?

Y

Is the sampling location either documented sufficiently and marked to allow it to be found/sampled again in the future?

Y

Are sampling times, Traffic Report Numbers and sample description noted in the FNB?

Y/N/A

Is sampling proceeding from the suspected least contaminated area to the most contaminated area?

Y

Have all field measurements been properly taken as per Sampling Plan?

Y

Are field measurement(s) being taken immediately after the sample is collected?

Y

Have sample bottles been labeled properly?

Y

Have proper containers and preservatives been used?

Y

Are proper sample volumes procured?

Y

Does the potential for sample cross-contamination exist based on procedures observed?

N

Have MS and MSD(s) been collected as per QA/QC Plan?

Y

Does a travel blank exist for each matrix present?

Y

Are samples being refrigerated/iced immediately after collection?

Y

Has condition of sample been recorded in the FNB and in the traffic report?

Y

Have legal seal(s) been properly filled out and attached to the shipping container(s)?

Y

28

5

3

22

Figure 3-7 Quality Assurance Audit Form (continued)
Occidental Chemical Corporation, Delaware City, Delaware

Soil Sampling (Check if not applicable): 1/13, 25, 26/99

Type: _____ Hand: _____ Auger or Rig-Backhoe Pit

Are samples being collected at proper depths? Y

Are samples being screened with an OVA (if specified in Work Plan and applicable)? Y

Is a description of soils/materials being logged? Y

Have soils been homogenized where applicable (Specified by the Sampling Plan)? Y

Surface Water/Sediment Sampling (check if not applicable): 12/14-18/98

Have stream flow and velocity parameters been noted? N/A

Estimated or Measured

Has sampling proceeded from downstream to upstream locations? Y

Has the sampler acquired the water sample upstream of his position to minimize suspended sediment from entering the sample? Y

Have water samples been collected in the mixing zone, not stagnant areas? Y

Have sediments been characterized as to type and size distribution? Y

Has the proper sediment fraction (fine, depth) been sampled for the analyses of interest? Y

Ground Water Sampling (Check if not applicable): 12/1-4/98

Have organic vapor readings been obtained when the well head was opened? Y

Have depth to water level readings been taken for all wells? Y

Have the well specifications been noted properly (i.e., total depth, casing diameter, depth-to-water to the nearest one-hundredth of a foot, etc.)? Y

Has the purge volume been calculated properly? Y

Has well yield been properly evaluated to determine when sample acquisition should take place (i.e., does well go dry and need to recover)? Y

Has the purge pump been placed at the proper level to ensure proper well evacuation? Y

Figure 3-7 Quality Assurance Audit Form (continued)
Occidental Chemical Corporation, Delaware City, Delaware

What evacuation method has been used?			Submersible
Bailer	Submersible	Other _____	
Bladder Pump	Centrifugal Pump	Fultz Pump	_____
If metals are being analyzed, have the samples been field filtered?			___Y___
Are field pH, conductivity, and temperature being measured and documented?			___Y___
Is there documentation of calibrating the instruments?			___Y___
Are bailer bags marked as to site name, well ID, and date of dedication?			___N/A___
Is bailer line and bailer dedicated to each well and line disposed of after use?			___N/A___
Bailer Type _____	Line Type _____		___N/A___
Have appropriate measures been taken to dispose of contaminated purge water, pump lines, bailers, etc.?			___Y___
For Domestic Wells - Has as much information on the well and distribution system been obtained (i.e., depth, casing type, diameter, treatment present, etc.)?			___N/A___
Has the sample been collected prior to treatment and as close to the well head as possible?			___N/A___
Has the domestic well been purged sufficiently to reach pH, conductivity, and temperature stabilization?			___N/A___
Have any fixtures been removed from the domestic well before the sample was taken?			___N/A___

Decontamination:

Has sampling equipment been decontaminated properly for the given analytes as per QA Plan?	___Y___
Have the proper decontamination solutions been used?	___Y___
For large equipment (backhoes, drill rigs), has decontamination taken place in an appropriate area?	___Y___
Has decontamination water/solution been collected for proper disposal?	___Y___

Where disposed? transferred to on-site storage tank
for offsite disposal upon project completion

Figure 3-7 Quality Assurance Audit Form (continued)
Occidental Chemical Corporation, Delaware City, Delaware

Has disposable equipment, that is contaminated, been properly deconned and disposed of?	_____Y_____
Have decon samples been taken from the sampling equipment as per Sampling Plan?	_____Y_____
Has all appropriate information been recorded in the FNB?	_____X_____
Have the weather conditions been recorded?	_____Y_____
Are weather conditions affecting sample quality?	_____N_____
Is the Chain of Custody being maintained for the samples?	_____Y_____
Have all personnel been properly trained to operate the equipment present?	_____Y_____
Are the objectives of the sampling activities understood by the field personnel?	_____Y_____
Are employees conducting the investigation in a professional manner?	_____Y_____

Audit Summary and Comments:

.....

.....

.....

.....

.....

.....

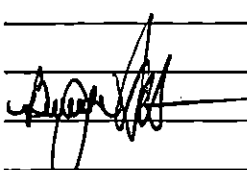
.....

.....

.....

.....

Signed by: _____

Sampler:	_____	Print Name:	_____
Auditor:			<u>Bryan Foulke</u>
Date:	<u>5/27/99</u>		_____

APPENDIX H

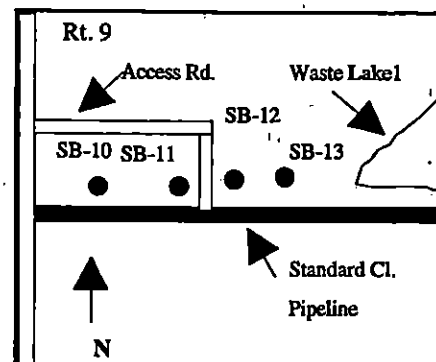
LITHOLOGIC AND CONSTRUCTION WELL LOGS

SOIL BORING LOGS

Environmental Resources Management

W/O No: 72208.00.01 Date Completed 12 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW 2.50 feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

SB-10



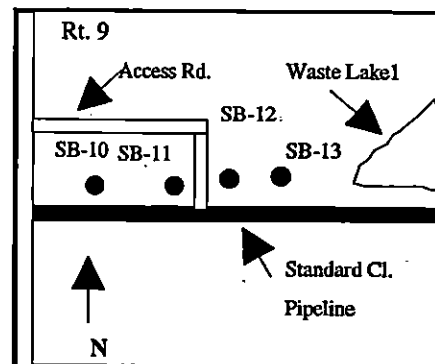
Location Sketch Map

	Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
							Recovery
							per 24" Description
	0			0		0-2	24/24 0-8" SAND, silty, trace clay, dark brown, soft, organic-rich material.
							8-18" SAND, silty, medium orange-brown.
							18-24" CLAY, silty, dark brown, hard, plastic.
	2			0		2-4	21/24 0-5" SAND, silty, light orange-brown, wet.
							5-9" CLAY, silty, soft, pliable.
							9-21" CLAY, silty, dark grey, mottled. Black shiny tar-like substance near bottom of spoon.
							Rounded quartz pebbles present.
	4			0		4-6	18/24 0-8" SAND, silty, black to dark grey, moist.
							8-10" SAND, silty, light brown.
	6			0		6-8	16/24 0-2" mixed CLAY, silty, light orange and SAND, dark grey, silty, wet.
							2-16" CLAY, silty, light orange-grey, soft, moist.
	8			0		8-10	24/24 0-10" SAND, silty, Light brown orange, wet.
							10-24" CLAY, silty, light orange brown, with large rounded quartz pebbles.

Environmental Resources Management

SB-10

WFO No:	72208.00.01	Date Completed	12 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW	2.50	feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



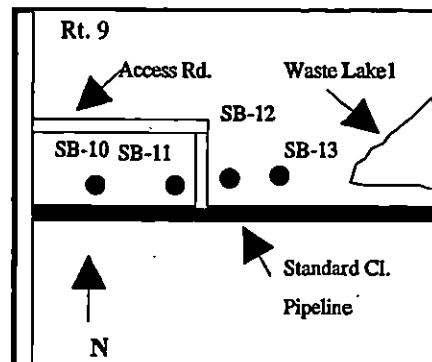
Location Sketch Map

[illegible]

Environmental Resources Management

SB-11

WDO No: 72208.00.01 Date Completed 13 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW 9.00 feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



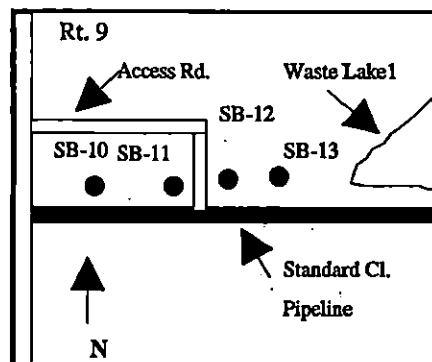
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification	
						Recovery	Description
	0		0	7-10	0-2	15/24	0-6" CLAY, silty, dark red brown, organic-rich.
				14-8			6-15" CLAY, silty to sandy, light grey, trace gravel.
	2		0	5-6	2-4	11.5/24	0-2" CLAY, silty to sandy, light grey, trace gravel.
				6-5			2-11.5" CLAY, silty, light orange brown, moist.
	4		0	7-8	4-6	22/24	0-22" CLAY, silty, mottled, light orange brown to grey with trace sand and gravel, moist.
				11-14			
	6		4-6	14-48	6-8	20/24	0-4" CLAY, silty, mottled, lt orange brown, grey, red.
				62-77			4-20" SAND, silty, light orange, fine to med. grained, mod. well sorted, wet at 6'.
	8		0.2-0.5	8-16	8-10	23/24	0-23" CLAY, silty, mottled light tan to brown and grey, with thin silt and fine sand lenses, stiff to brittle.
				43-50			

Environmental Resources Management

SB-11

Well No:	72208.00.01	Date Completed	13 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW	9.00	feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



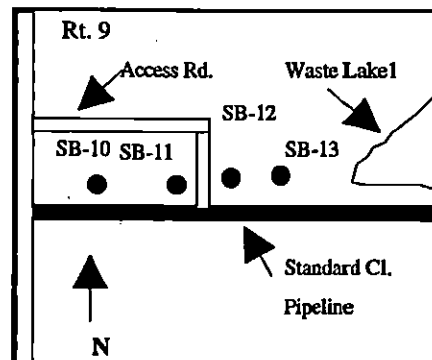
Location Sketch Map

[illegible]

Environmental Resources Management

SB-12

WFO No: 72208.00.01 Date Completed 13 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 14 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW 6.82 feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



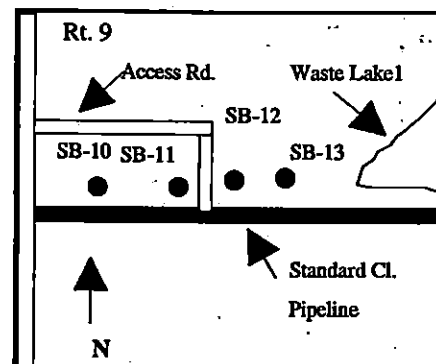
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0	6-8	0-2	18/24 0-18" SAND, silty, med. orange brown, mixed with
				12-15		limestone fill material.
	2		0	31-24	2-4	20/24 0-20" SILT, sandy, light orange grey, with
				22-16		limestone and schist fill material.
	4		0	20-17	4-6	16/24 0-16" SILT, sandy, light grey-orange, with
				16-16		schist fill material, dry.
	6		4-6	5-4	6-8	13/24 0-8" SILT, sandy, light orange brown, with red
				3-2		rounded quartz pebbles.
						8-13" CLAY, silty, light orange brown, moist to wet,
						organic odor.
	8		2-3.5	2-1	8-10	4/24 0-4" CLAY, silty, light orange brown, moist.
				1-2		

Environmental Resources Management

WO No: 72208.00.01 Date Completed 13 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 14 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW 6.82 feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

SB-12



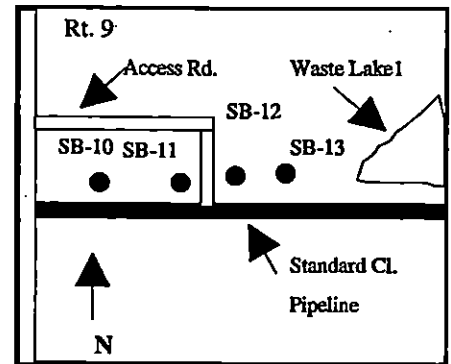
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
	10		5-34	10-12	10-12	12/24 0-6" SAND, silty, light orange brown, dry.
				11-9		6-12" CLAY, silty, light orange brown, soft, moist.
	12		114		12-14	16/24 0-4" CLAY, silty, light orange brown, soft, wet.
						4-8" SILT, sandy, light orange brown.
						8-12" SAND, light orange brown.
						12-16" CLAY, orange to black, staining?
						Strong odor.
	14					
Lithologic samples were collected with standard split-spoons (2 inch x 2 feet). The driving mechanism was a 140 pound hammer dropped 30-inches.						
Blow counts were recorded per 0.5 foot interval.						
The 8.25-inch I.D. borehole was advanced to 14 ft bgs, with continuous split spoons.						

Environmental Resources Management

SB-13

Project No: 72208.00.01 Date Completed 18 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev _____ feet msl
 East Riser Elev _____ feet msl
 Screen NA Length (ft) _____ Diameter _____
 Slot Size NA Stabilized DTW 7.00 feet TOC _____
 Riser NA Length (ft) _____ Diameter _____
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



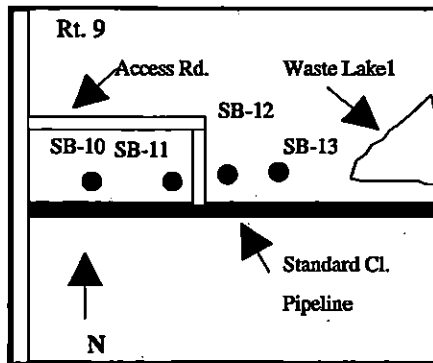
Location Sketch Map

Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
					Recovery
					per 24" Description
0		>2500	4-4	0-2	16/24 0-10" SILT, sandy, light orange, with organic material.
			7-10		10-16" CLAY, silty, light tan to brown.
					Organic odor.
2		120	6-6	2-4	18/24 0-16" CLAY, sandy to silty, light orange, soft, moist
			9-10		plastic.
					16-18" CLAY, silty, dark grey to black, soft, moist.
4		0	7-5	4-6	24/24 0-6" CLAY, sandy to silty, light tan.
			4-7		6-24" CLAY, silty, mottled dark grey to black, soft.
6		1550	4-5	6-8	24/24 0-10" PEAT, all plant material, wet.
			6-4		10-24" CLAY, grey to black, soft.
8					

Environmental Resources Management

SB-13

CD No:	72208.00.01	Date Completed	18 Aug 98		
Object	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW	7.00	feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G



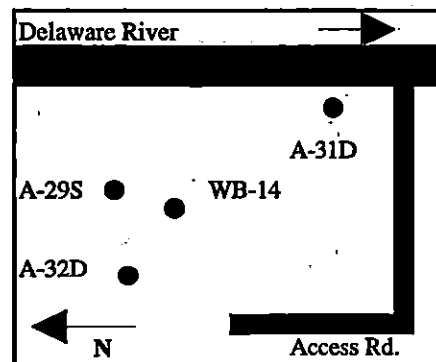
Location Sketch Map

[illegible]

Environmental Resources Management

WB-14

WO No: 72208.00.01 Date Completed 19 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



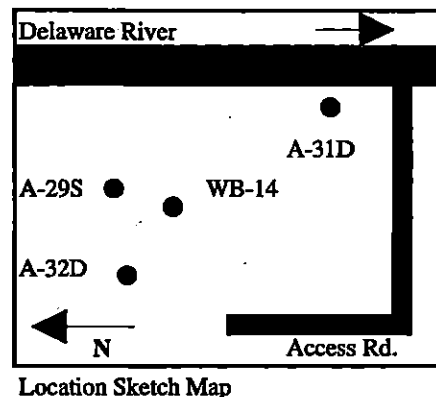
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0.4	6-7	0-2	15/24 0-6" SILT, sandy, dark brown, moist, w/ abund. roots.
				8-4		6-15" SILT, sandy, med. brown orange, soft, moist.
	2		0.5	3-2	2-4	17/24 0-4" SILT, sandy, medium brown orange, dry.
				4-6		4-17" CLAY, silty, dk. grey to black, micaceous, moist, with plant material.
	4		0.8	4-3	4-6	24/24 0-5" SILT, sandy, dark brown, peat-like.
				2-2		5-24" CLAY, silty, black, soft, moist.
	6		4.0	4-4	6-8	24/24 CLAY, silty, dark grey to black, soft, moist.
				2-1		With organic material.
	8		1.0	3-2	8-10	24/24 CLAY, silty, dark grey to black, moist,
				1-2		with plant material.

Environmental Resources Management

WB-14

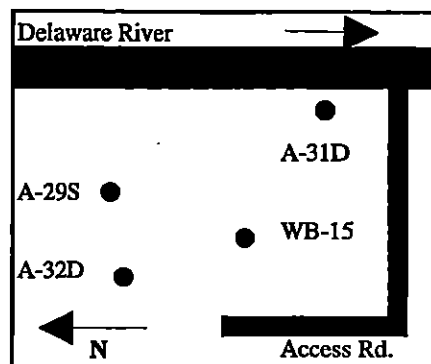
Job No:	72208.00.01	Date Completed	19 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	

[illegible]

Environmental Resources Management

WB-15

Job No: 72208.00.01 Date Completed 25 Aug 98
 Project R. F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev _____ feet msl
 East Riser Elev _____ feet msl
 Screen NA Length (ft) _____ Diameter _____
 Slot Size NA Stabilized DTW _____ feet TOC _____
 Riser NA Length (ft) _____ Diameter _____
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



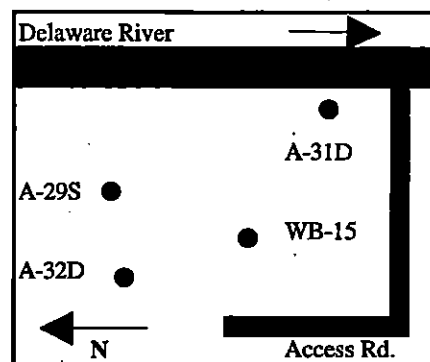
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0.0	4-8	0-2	19/24 SILT, sandy, medium orange brown, with limestone and quartzite fill material, trace clay and plant roots.
				12-12		
	2		0.9	14-8	2-4	18/24 0-11" SILT, sandy, medium orange.
				5-8		11-18" CLAY, silty, soft, moist.
	4		2.2	5-3	4-6	20/24 0-16" CLAY, silty, grey to black, soft, moist.
				2-2		16-20" CLAY, silty, black, moist, abundant plant material.
	6		10.5	2-2	6-8	24/24 CLAY, silty, dark grey to black, soft, moist.
				1-1		
	8					

Environmental Resources Management

WB-15

Well No:	72208.00.01	Date Completed	25 Aug 98		
Project	R. F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



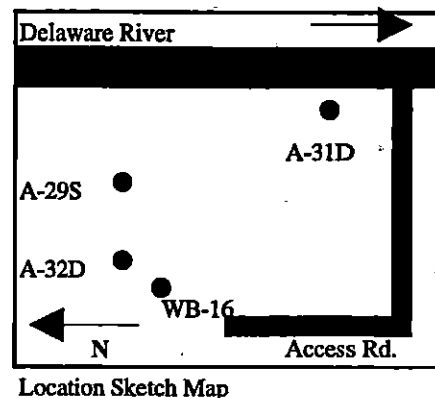
Location Sketch Map.

[illegible]

Environmental Resources Management

WB-16

WO No: 72208.00.01 Date Completed 19 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

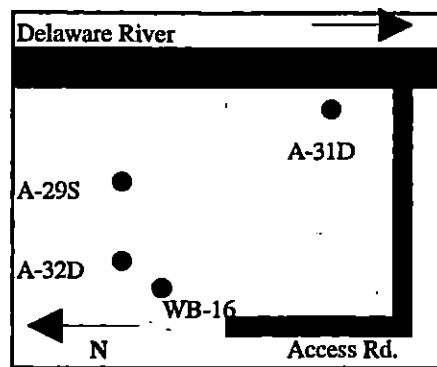


	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification	
						Recovery	
						per 24"	Description
	0		0.5	3-5	0-2	18/24	SILT, sandy, light to med. brown, with abundant plant material and roots.
				5-9			
	2		13.4	5-3	2-4	24/24	0-10" SILT, sandy, medium brown orange, with peat.
				3-2			10-24" CLAY, silty, med. grey to black, very soft, wet.
	4		1400.0	1-1	4-6	24/24	CLAY, silty, dk. grey to black, wet.
				1-1			Organic odor.
	6		2100.0	1-1	6-8	24/24	CLAY, silty, dark grey to black, soft, moist.
				1-1			With plant material.
							Strong odor.
	8		1400.0	1-1	8-10	24/24	CLAY, silty, dark grey to black, wet,
				1-1			with plant material.

Environmental Resources Management

WB-16

WFO No:	72208.00.01	Date Completed	19 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G



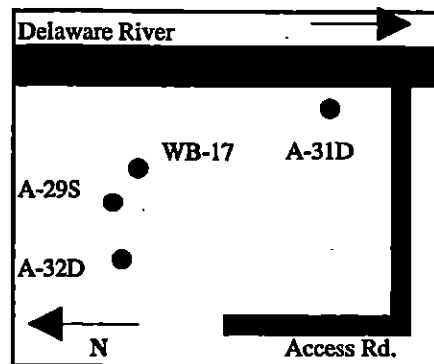
Location Sketch Map

[illegible]

Environmental Resources Management

WB-17

ID No: 72208.00.01 Date Completed 19 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 12 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



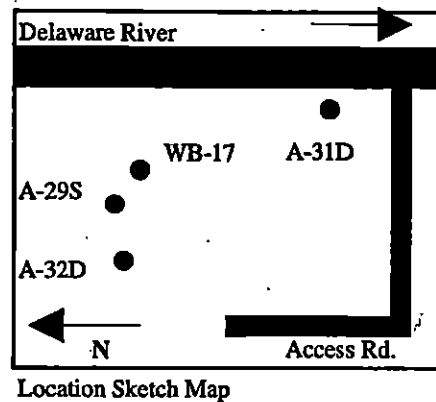
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0.0	3-19 16-23	0-2	21/24 SILT, sandy, mottled light tan to grey, hard, dry, iron stained, with roots.
	2		0.0	16-13 16-21	2-4	15/24 0-3" SILT, sandy, mottled light tan to grey, with roots. 3-15" SILT, sandy, light grey to grey white, soft, trace gravel and roots.
	4		0.0	9-5 6-6	4-6	24/24 0-6" SILT, sandy, light grey to grey white. 6-12" SILT, light to medium brown, dry, with peat. 12-24" CLAY, black, soft, moist, with plant material.
	6		3.4	4-4 2-2	6-8	24/24 CLAY, silty, dark grey to black, soft, moist. Organic odor.
	8		0.6	2-1 2-2	8-10	16/24 CLAY, silty, dark grey to black, moist to wet, with abundant plant material.

Environmental Resources Management

WB-17

WD No:	72208.00.01	Date Completed	19 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	12	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



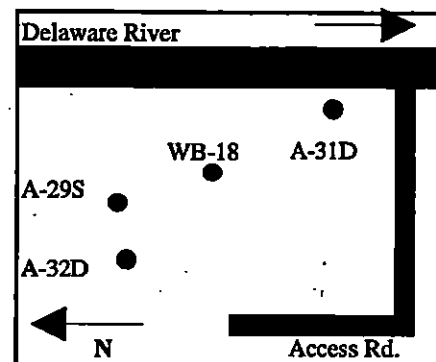
Location Sketch Map

[illegible]

Environmental Resources Management

WB-18

WDN No: 72208.00.01 Date Completed 18 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 14 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



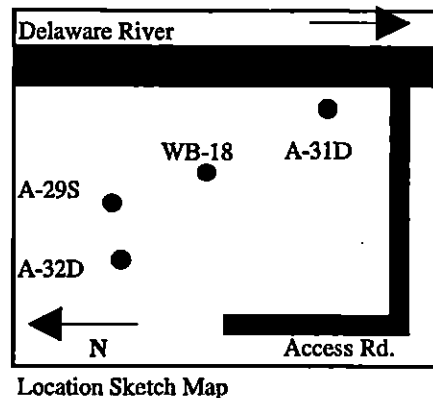
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0.2	9-9	0-2	21/24 SAND, silty, light brown, dry, with roots, trace grey
				9-10		gravel and sand lenses,
	2		0.0	12-14	2-4	16/24 SILT, sandy, light brown, mottled, with limestone and
				15-8		asphalt fill material.
	4		0.0	1-2	4-6	4/24 SILT, sandy, light brown, mottled.
				2-3		
	6		0.0	1-2	6-8	4/24 SILT, sandy, light brown, mottled.
				2-1		
	8		6.5	1-2	8-10	12/24 CLAY, silty, dark grey to black, with thin light tan,
				2-1		sandy stringers.

Environmental Resources Management

WB-18

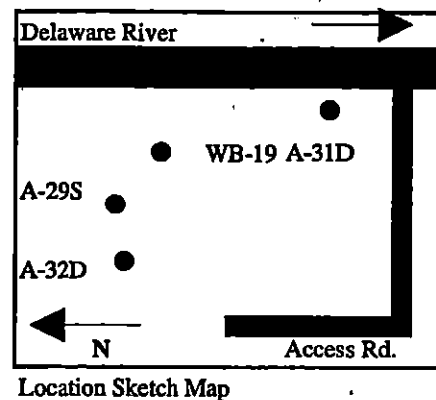
WD No:	72208.00.01	Date Completed	18 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	14	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G

[illegible]

Environmental Resources Management

WB-19

ID No: 72208.00.01 Date Completed 20 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 12 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



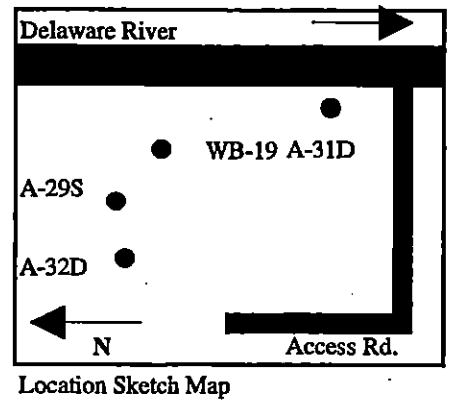
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		2.0	4-7	0-2	18/24 SILT, sandy, lt. to med. brown, dry, hard, with plant material, red CLAY lens at 6",
				11-14		
	2		2.4	21-12	2-4	17/24 0-7" SILT, sandy, med. brown, dry, harder.
				11-8		7-17" CLAY, silty, dark brown, soft, moist.
	4		2.0	3-3	4-6	24/24 CLAY, dark grey to black, micaceous, soft, moist.
				2-2		
	6		8.0	1-1	6-8	24/24 CLAY, silty, med. grey to black, soft, moist.
				1-2		Abundant plant material.
	8		21.0	1-1	8-10	24/24 CLAY, silty, med. grey to black, soft, moist.
				1-1		Abundant plant material.

Environmental Resources Management

WB-19

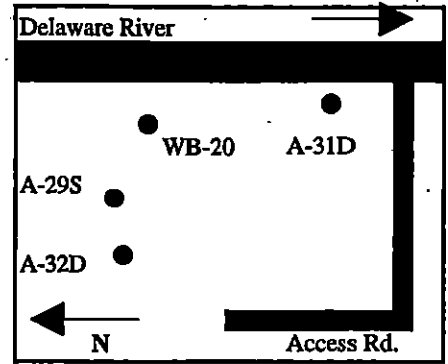
WFO No:	72208.00.01	Date Completed	20 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	12	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G

[illegible]

Environmental Resources Management

WB-20

NO No: 72208.00.01 Date Completed 24 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



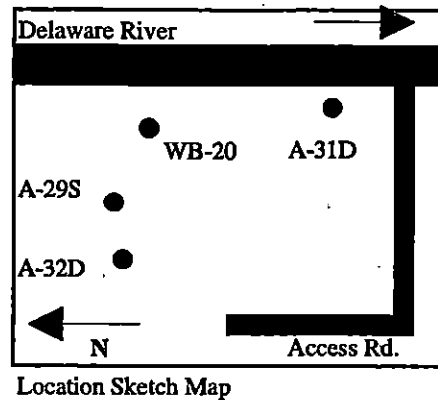
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification	
						Recovery	
						per 24"	Description
	0		0.0	4-3	0-2	22/24	SILT, sandy, light to med. brown, soft, moist with rounded quartz pebbles.
				10-14			
	2		0.0	9-5	2-4	16/24	0-6" SILT, A/A
				6-7			6-16" CLAY, silty, dark to med. grey, dry, hard, with abundant plant material.
	4		0.3	4-4	4-6	24/24	0-4" SAND, silty, brown, dry.
				2-2			4-24" CLAY, silty, dk grey black, soft, moist, with plant material.
	6		1.2	2-1	6-8	24/24	CLAY, silty, dk. grey black, with abundant plant material.
				1-2			
	8		3.0	1-1	8-10	4/24	CLAY, silty, dk. grey black, with abundant plant material, wet.
				1-1			

Environmental Resources Management

WB-20

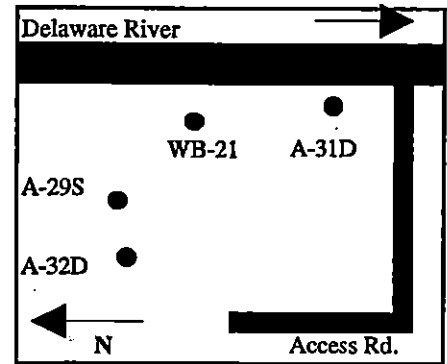
Job No:	72208.00.01	Date Completed	24 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	

[illegible]

Environmental Resources Management

WB-21

ID No: 72208.00.01 Date Completed 24 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



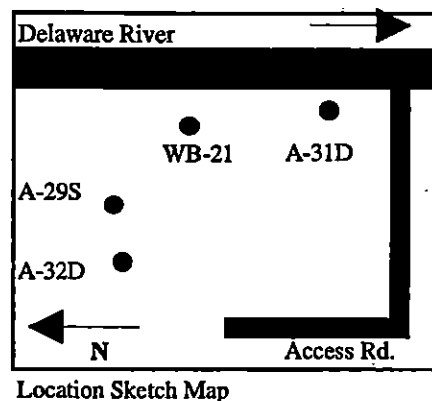
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification	
						Recovery	Description
	0		0.0	50-45 49-71	0-2	20/24	0-2" SILT, clayey to sandy, dark brown, with roots, organic-rich.
							2-20" SILT, sandy, medium brown, hard, dry, trace gravel.
	2		0.0	21-22 15-8	2-4	8/24	SILT, sandy, med.to dark brown, moist, soft, with trace gravel.
	4		0.2	5-4 2-2	4-6	16/24	0-4" SAND, silty, med. brown, soft, moist. 4-16" CLAY, silty, black, soft, moist, with abundant plant material.
	6		11.0	1-1 1-2	6-8	24/24	CLAY, silty, black, with abundant plant material.
	8						

Environmental Resources Management

WB-21

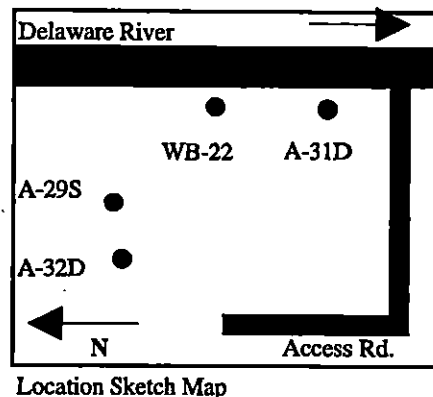
WFO No:	72208.00.01	Date Completed	24 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G

[illegible]

Environmental Resources Management

WB-22

WDO No: 72208.00.01 Date Completed 19 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

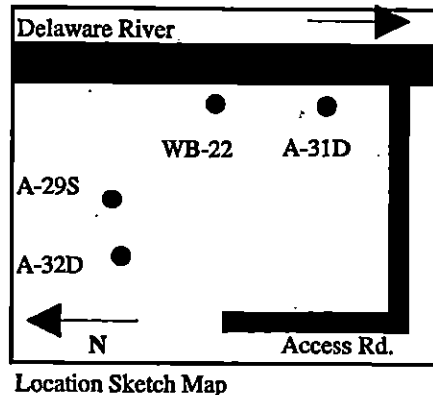


	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		1.0	4-4	0-2	21/24 0-4" SILT, sandy, dark brown.
				7-16		4-21" SAND, silty, med. orange brown to orange, moist, with gravel.
	2		5.6	13-6	2-4	14/24 0-4" SAND, silty, medium orange.
				6-6		4-14" CLAY, silty to sandy, med. red brown,
	4		1.8	4-3	4-6	18/24 0-3" SAND, silty, medium orange.
				3-2		3-18" CLAY, silty, dark grey to black, moist.
	6		0.8	1-2	6-8	24/24 CLAY, silty, dark grey to black, very soft, moist.
				1-2		With plant material.
	8		0.5	1-1	8-10	24/24 CLAY, silty, dark grey to black, wet.
				1-1		With plant material.

Environmental Resources Management

WB-22

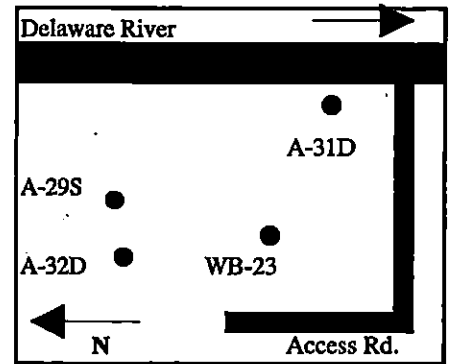
WFO No:	72208.00.01	Date Completed	19 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G

[illegible]

Environmental Resources Management

ID No: 72208.00.01 Date Completed 20 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

WB-23



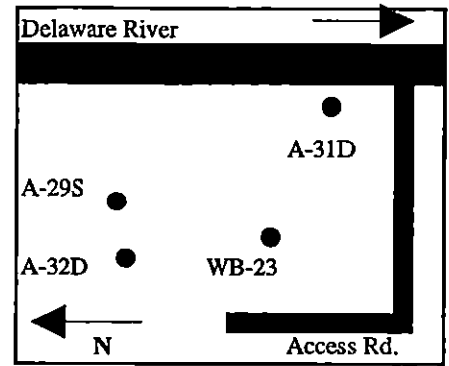
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification	
						Recovery	
						per 24"	Description
	0		2.0	3-2	0-2	19/24	0-3" SILT, dark brown, organic-rich.
				2-4			3-19" CLAY, silty, dark brown, hard.
	2		1.5	5-3	2-4	24/24	0-10" CLAY, silty, dk brown, abundant plant material.
				3-5			10-24" CLAY, silty, dark grey to black, moist with plant material.
	4		4.0	3-3	4-6	24/24	CLAY, silty, dark grey to black, soft with abundant plant material.
				3-2			
	6		3.6	1-1	6-8	24/24	CLAY, silty, dark grey to black, soft, wet.
				1-1			
	8						

Environmental Resources Management

WB-23

Well No:	72208.00.01	Date Completed	20 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



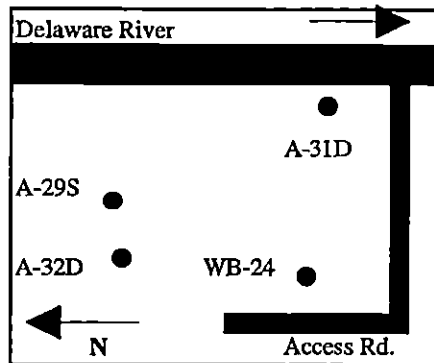
Location Sketch Map

[illegible]

Environmental Resources Management

WB-24

NO No:	72208.00.01	Date Completed	24 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



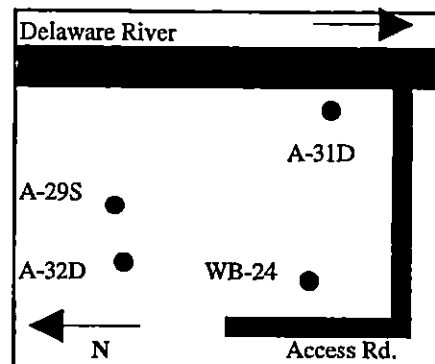
Location Sketch Map

	Depth (feet BGS)		Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
							Recovery
							per 24" Description
	0			0.0	7-20	0-2	20/24 SILT, sandy, light brown to orange, with schist fill
					22-47		material and rounded quartz pebbles.
	2			0.0	17-10	2-4	6/24 SILT, sandy, light brown to orange, with plant roots.
					5-5		
	4			0.8	3-1	4-6	24/24 0-4" SILT, clayey, med. brown, harder, dry.
					2-2		4-24" CLAY, silty, black, soft, moist.
	6			0.2	3-3	6-8	24/24 CLAY, silty, black, soft, wet, with plant material.
					3-3		
	8						

Environmental Resources Management

WB-24

No:	72208.00.01	Date Completed	24 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



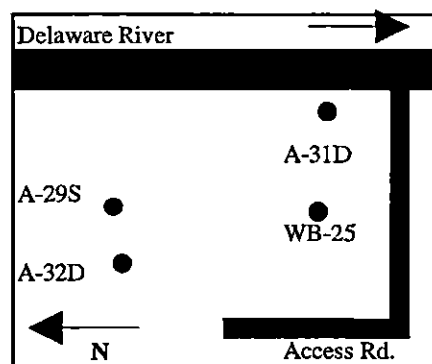
Location Sketch Map

[illegible]

Environmental Resources Management

JO No:	72208.00.01	Date Completed	24 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	6	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	

WB-25



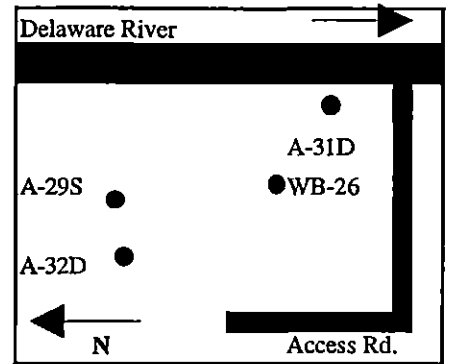
Location Sketch Map

	Depth (feet BGS)		Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
							Recovery
							per 24" Description
	0			0.0	9-14	0-2	20/24 SILT, clayey, light to med. brown, soft, dry with rounded quartz pebbles.
					13-33		
	2			0.2	16-17	2-4	15/24 0-11" SILT, A/A
					13-19		11-15" CLAY, silty, dark grey to black, soft, moist.
							Trace sand.
	4			0.4	10-9	4-6	24/24 0-8" CLAY, silty, dark grey to black.
					5-9		8-17" SAND, silty, light grey to brown.
							17-24" CLAY, black, soft, wet, with plant material.
	6						
Lithologic samples were collected with standard split-spoons (2 inch x 2 feet). The driving mechanism was a 140 pound hammer dropped 30-inches.							
Blow counts were recorded per 0.5 foot interval.							
The 8.25-inch I.D. borehole was advanced to 6 ft bgs.							
with continuous split spoons.							

Environmental Resources Management

WB-26

NO No: 72208.00.01 Date Completed 20 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 14 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



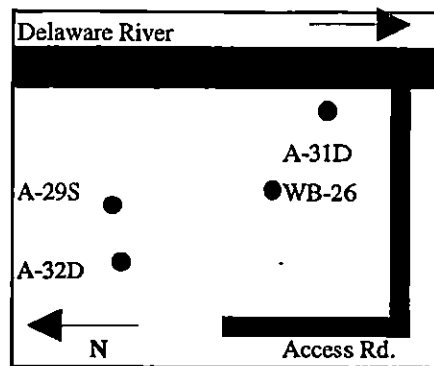
Location Sketch Map

Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
					Recovery
					per 24" Description
0		2.1	4-14	0-2	16/24 SILT, sandy, tan to lt. brown, dry, hard.
			24-24		
2		1.6	38-27	2-4	14/24 SILT, sandy, lt. to med. brown, with rounded qtz. pebbles.
			14-11		
4		1.9	6-6	4-6	24/24 0-11" SILT, sandy, lt. to med. brown, with gravel.
			3-5		and schist fill material, some plant material.
					11-24" CLAY, silty, med. grey to black, soft.
6		11.0	5-3	6-8	24/24 CLAY, silty, med. grey to black, soft, moist.
			1-2		
8		1.4	3-3	8-10	24/24 CLAY, silty, med. grey to black, wet.
			2-2		With plant material.

Environmental Resources Management

WB-26

WO No:	72208.00.01	Date Completed	20 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	14	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



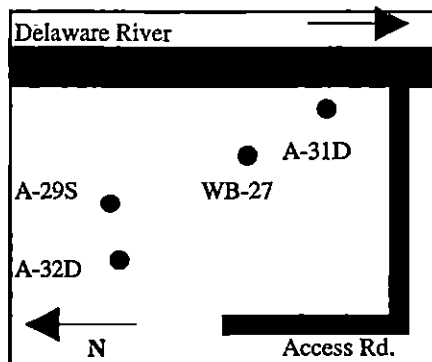
Location Sketch Map

[illegible]

Environmental Resources Management

WB-27

IO No: 72208.00.01 Date Completed 17 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 12 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



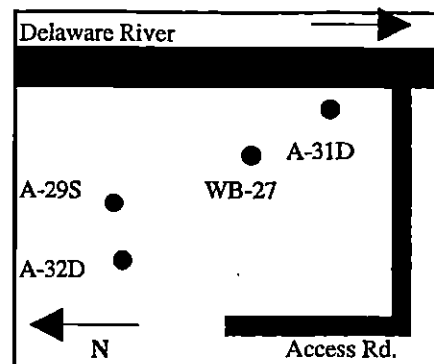
Location Sketch Map

Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
					Recovery
					per 24" Description
0		0	16-26	0-2	20/24 0-16" SILT, sandy, light orange brown, hard, dry,
			27-23		with slag and trace pebbles.
					16-20" SILT, sandy, dark to medium brown, dry, hard.
2		0	21-23	2-4	17/24 CLAY, silty to sandy, dark brown grey, with quartz
			27-21		and slag fill material.
4		0	5-5	4-6	18/24 0-16" SAND, silty, med-brown orange, medium to
			4-4		coarse grained, soft, moist.
					16-18" CLAY, black, silty, micaceous, with plant
					material.
6		0	2-2	6-8	18/24 0-8" SAND, silty, medium brown orange, soft,
			1-1		with abundant plant material.
					8-18" CLAY, silty, black, very soft, moist.
8		0.0	3-3	8-10	4/24 SAND, silty, light brown, with CLAY, dark grey, soft.
			2-2		

Environmental Resources Management

WB-27

No:	72208.00.01	Date Completed	17 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	12	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



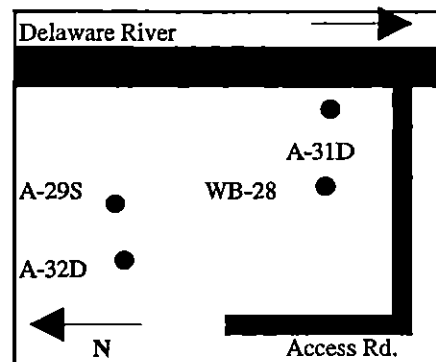
Location Sketch Map

[illegible]

Environmental Resources Management

WB-28

IO No: 72208.00.01 Date Completed 17 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



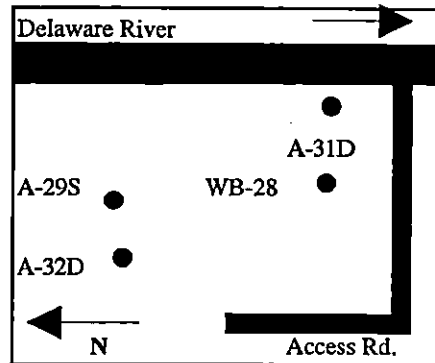
Location Sketch Map

	Depth (feet BGS)		Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
							Recovery
							per 24" Description
	0			0	16-27	0-2	17/24 SILT, sandy to clayey, light orange brown, hard, dry, with trace gravel.
					18-8		
	2			0	4-4	2-4	12/24 0-2" SAND, silty, light orange brown, dry.
					5-5		2-12" CLAY, silty, dark brown, soft, with abundant plant material (roots), "peat-like".
	4			0	2-2	4-6	12/24 0-2" CLAY, silty, dark brown.
					1-1		2-12" CLAY, dark grey-blue, very soft.
	6			0	1-1	6-8	12/24 CLAY, silty, medium to dark grey, micaceous, with trace medium orange-brown sandy silt.
					1-1		
	8			0.0	1-1	8-10	14/24 CLAY, silty, light to medium grey, micaceous.
					1-1		

Environmental Resources Management

WB-28

ID No:	72208.00.01	Date Completed	17 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



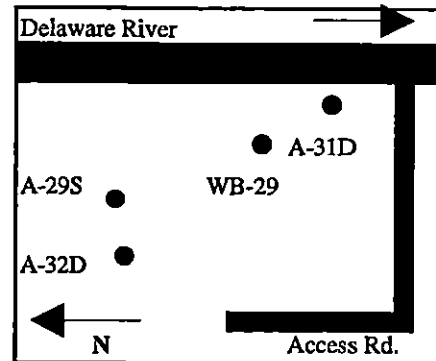
Location Sketch Map

[illegible]

Environmental Resources Management

WB-29

ID No: 72208.00.01 Date Completed 17 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev _____ feet msl
 East Riser Elev _____ feet msl
 Screen NA Length (ft) _____ Diameter _____
 Slot Size NA Stabilized DTW _____ feet TOC _____
 Riser NA Length (ft) _____ Diameter _____
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



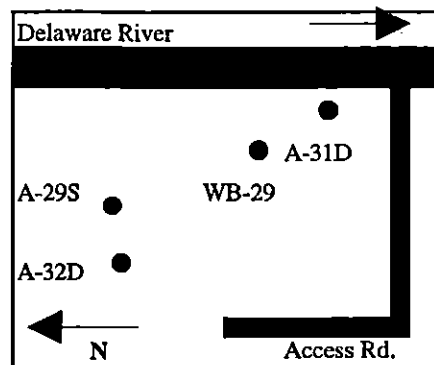
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0	4-8	0-2	21/24 0-16" SAND, silty, light orange brown, with limestone fill material, and plant material, wood and roots.
				11-15		16-22" SILT, clayey, light grey, with abundant roots.
						Trace sand and gravel.
	2		0	7-8	2-4	14/24 SILT, clayey, light grey, dry, brittle, with abundant plant roots.
				12-15		
	4		0	2-2	4-6	14/24 0-2" SILT, clayey, light grey.
				2-2		2-14" CLAY, mottled medium to light grey to black, soft, with abundant plant material.
	6		0	1-1	6-8	10/24 CLAY, light grey-brown, soft, wet, with plant material.
				1-3		
	8					

Environmental Resources Management

WB-29

ID No:	72208.00.01	Date Completed	17 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G



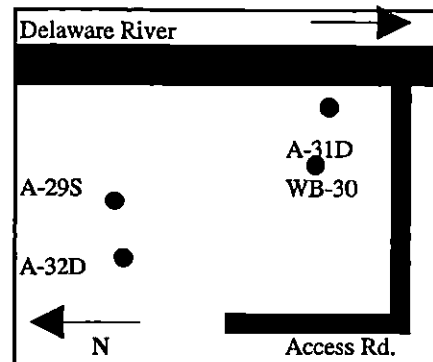
Location Sketch Map

[illegible]

Environmental Resources Management

WB-30

IO No: 72208.00.01 Date Completed 14 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 10 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

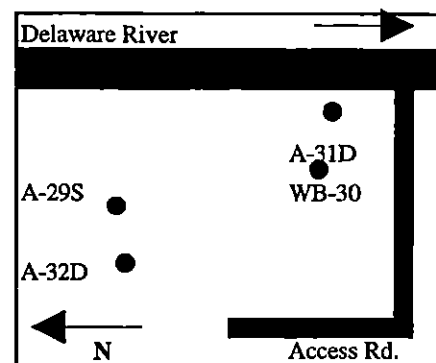


Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification	
						Recovery	
						per 24"	Description
	0		0	5-15	0-2	20/24	0-10" SILT, sandy, dark brown, humous-rich, trace schist fill.
				17-17			10-20" SILT, sandy to gravelly, hard, dry, with rounded quartz pebbles.
	2		0	11-11	2-4	17/24	0-10" SAND, silty, light grey-brown, fine grained, trace gravel, dry.
				15-17			10-17" SILT, clayey, medium grey, trace gravel, moist.
	4		1	7-4	4-6	22/24	0-16" SAND, silty, light to medium grey, medium to coarse grained,
				3-2			16-22" CLAY, silty, mottled grey to black, soft, moist.
	6		0.1-0.2	2-1	6-8	23/24	CLAY, silty, dark grey to black, soft, moist to wet, with abundant plant material, roots, etc.
				1-1			
	8		0.1	2-1	8-10	16/24	0-8" CLAY, dark grey to black, , soft, with plant material.
				2-1			8-9" SAND, light grey, coarse grained.

Environmental Resources Management

ID No:	72208.00.01	Date Completed	14 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	10	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	

WB-30

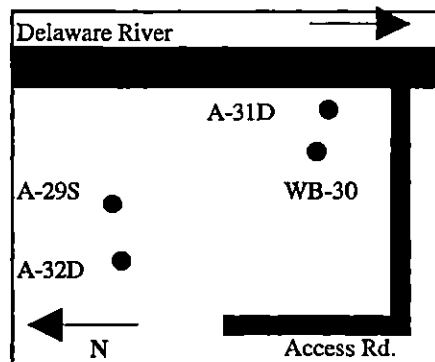
Location Sketch Map

[illegible]

Environmental Resources Management

WB-31

O No: 72208.00.01 Date Completed 14 Aug 98
 Subject R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



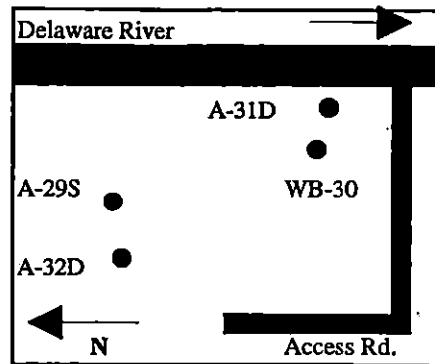
Location Sketch Map

	Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
	0		0	"7-17	0-2	22/24 0-17" SILT, sandy, light orange brown, dry, with roots.
				19-21		17-19" CLAY, dark grey brown, brittle, with abundant plant material.
						19-22" SILT, sandy, light brown, gravelly, with some rounded quartz pebbles.
	2		0.2	14-9	2-4	9/24 0-6" SILT, sandy, light brown, gravelly.
				7-5		6-9" CLAY, silty, light grey to black.
	4		0	wt. of	4-6	24/24 CLAY, black, soft, with abundant plant material.
				hmmr.		
	6			1-1	6-8	16/24 CLAY, black, soft, pliable, moist to wet.
				1-1		
	8					

Environmental Resources Management

WB-31

JO No:	72208.00.01	Date Completed	14 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	



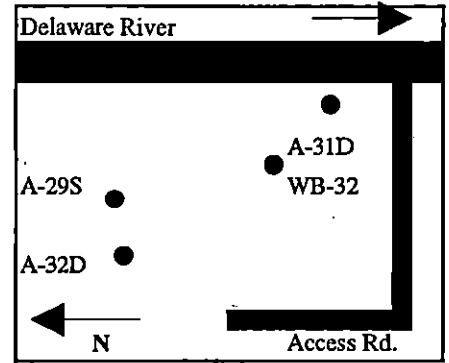
Location Sketch Map

[illegible]

Environmental Resources Management

WB-32

ID No: 72208.00.01 Date Completed 17 Aug 98
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 8 Diameter 8.25
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen NA Length (ft) Diameter
 Slot Size NA Stabilized DTW feet TOC
 Riser NA Length (ft) Diameter
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



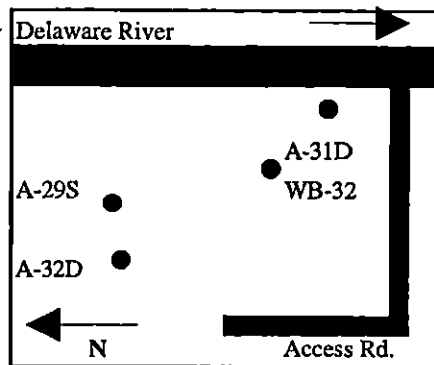
Location Sketch Map

Depth (feet BGS)	Well Construction Schematic	PID Reading (PPM)	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
					Recovery
					per 24" Description
0		0	12-17	0-2	22/24 0-16" SAND, silty, light orange brown, trace qtz.
			18-23		pebbles, and plant roots.
					16-22" SILT, clayey, light grey, with abundant roots.
					Trace sand and gravel.
2		0	17-16	2-4	22/24 0-10" SAND, silty, light tan orange, moist.
			12-11		10-22" CLAY, silty, mottled light grey and orange,
					with silty and sandy lenses.
4		0	2-2	4-6	22/24 0-3" SAND, silty, light grey, moist, trace clay.
			2-2		3-12" CLAY, dark grey to black, soft, moist.
6		0	1-1	6-8	23/24 CLAY, dark grey to black, soft, wet.
			1-1		
8					

Environmental Resources Management

CD No:	72208.00.01	Date Completed	17 Aug 98		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	8	Diameter	8.25
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	NA	Length (ft)		Diameter	
Slot Size	NA	Stabilized DTW		feet TOC	
Riser	NA	Length (ft)		Diameter	
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No. PG-001466-G	

WB-32



Location Sketch Map

[illegible]

WELL BORING LOGS

MONITORING WELLS
OXYCHEM DELAWARE CITY FACILITY

Well	Well Depth (ft bgs)	Northing	Easting	TOC Elevation (ft msl)	Surface Elevation (ft msl)	Screened Interva			
						top (ft bgs)	from (ft msl)	bottom (ft bgs)	to (ft msl)
B-5	29	582778.1369	441987.7494	19.28	17.09	19	-1.91	29	-11.91
A-6A	19.5	581991.5495	441917.6308	22.22	20.44	9.5	10.94	19.5	0.94
A-7A	19.5	581983.4374	441501.4213	19.87	17.84	9.5	8.34	19.5	-1.66
A-8	19	582266.4191	441992.7368	22.08	19.06	9	10.06	19	0.06
A-12	29	582256.8822	441360.9554	24.97	24.15	19	5.15	29	-4.85
A-13	56	581987.4305	441477.6612	20.59	17.60	46	-28.4	56	-38.4
A-14	21	582295.7741	441887.5534	19.74	17.13	11	6.13	21	-3.87
A-15	49	582432.6221	441757.9952	17.54	14.58	39	-24.42	49	-34.42
A-16	65	582543.1698	441495.8626	25.58	23.89	53	-29.11	63	-39.11
A-17	215	583058.4091	441504.8286		23.70		23.7		23.7
A-18	65	583058.6700	441504.6500	25.50	24.00	53	-29	63	-39
A-20	57.5	583742.4104	441273.4630	8.43	6.40	45	-38.6	55	-48.6
A-23	25	582426.7859	441762.6042	17.48	14.71	0	14.71	0	14.71
A-24	48	582543.1700	441487.4830	26.52	23.98	0	23.98	0	23.98
A-25S	36	583361.9594	441940.9770	19.83	17.87	26	-8.13	36	-18.13
A-25D	52	583358.3544	441934.6944	20.28	17.87	42	-24.13	52	-34.13
A-26OB	18	582861.6317	441577.9779	27.35	25.34	8	17.34	18	7.34
A-26S	45	582858.7215	441572.9062	27.35	25.59	35	-9.41	45	-19.41
A-26D	69	582856.0578	441577.5078	27.42	25.48	59	-33.52	69	-43.52
A-27S	30	583384.3118	440992.3695	25.48	22.90	20	2.9	30	-7.1
A-27D	65	583377.4542	441990.7000	25.13	22.97	55	-32.03	65	-42.03
A-29OB	20	584503.0954	443057.6182	4.98	2.60	10	-7.4	20	-17.4
A-29S	35	584502.1699	443081.2888	5.71	3.24	25	-21.76	35	-31.76
A-29D	60	584490.6459	443071.6365	4.84	3.42	50	-46.58	60	-56.58
A-30OB	18	584199.8085	444145.7624	9.87	7.88	8	-0.12	18	-10.12
A-30D	60	584191.8889	444152.4927	10.03	7.51	45	-37.49	60	-52.49
A-31OB	30	583335.4090	444466.8438	18.39	15.79	19.5	-3.71	30	-14.21
A-31D	65	583334.7649	444461.7695	18.79	15.64	54.5	-38.86	65	-49.36

MONITORING WELLS
OXYCHEM DELAWARE CITY FACILITY

Well	Well Depth (ft bgs)	Northing	Easting	TOC Elevation (ft msl)	Surface Elevation (ft msl)	Screened Interva			
						top (ft bgs)	from (ft msl)	bottom (ft bgs)	to (ft msl)
A-32OB	15	584274.3701	442548.2746	3.00	NA	5	NA	15	NA
A-32S	35	584281.2687	442545.3082	3.00	NA	25	NA	35	NA
A-32D	60	584274.7080	442540.1341	3.00	NA	45	NA	60	NA
A-33S	50	583146.7755	441369.8433	25.95	24.43	35	-10.57	50	-25.57
A-33D	70	583146.8828	441374.7781	26.72	27.08	60	-32.92	70	-42.92
A-34S	29	583111.7469	440671.8176	28.74	27.03	19	8.03	29	-1.97
A-34D	42	583111.6878	440677.1628	28.52	27.08	32	-4.92	42	-14.92
A-35S	19	583229.4013	440368.1848	16.21	13.82	9	4.82	19	-5.18
A-35D	40	583229.1585	440360.0068	16.05	13.52	30	-16.48	40	-26.48
A-36S	25	582595.5173	440449.2951	29.85	26.95	15	11.95	25	1.95
A-36D	39	582593.8690	440449.5542	29.78	27.02	29	-1.98	39	-11.98
A-37S	13	583632.4184	442141.4332	6.20	4.63	3	1.63	13	-8.37
A-37D	65	583629.1913	442138.513	6.52	4.70	55	-50.3	65	-60.3
A-38D	56	583562.9564	442060.5302	6.86	5.54	46	-40.46	56	-50.46
A-39OB	21	583197.82	441921.983	22.57	20.52	11	9.52	21	-0.48
A-39S	35	583199.5604	441925.9380	22.43	20.54	25	-4.46	35	-14.46
A-39D	58	583202.3834	441930.5249	22.36	20.19	48	-27.81	58	-37.81
R-110	35.5	583210.3174	442096.4095	18.38	16.39	30.5	-14.11	35.5	-19.11
R-112	35	583151.6824	441658.5334	24.75	22.33	30	-7.67	35	-12.67
A-11A	54	582564.5078	441304.9969	28.43	26.00	NA	NA	NA	NA
ST18S	36	581776.0000	441573.0000	1.00	0.00	14	-14	34	-34
ST18D	75	581777.0000	441581.0000	1.00	0.00	63	-63	73	-73

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-31D

Project Number: 7462

Driller: J. Jaworski

Date Started: 9/15/98 10:00 a.m.

Client: OxyChem - Glenn Springs

Drilling Method: HS Auger

Date Completed:

Location: Delaware

Surface Elevation:

CRA Supervisor: J. Garges, B. Foulke

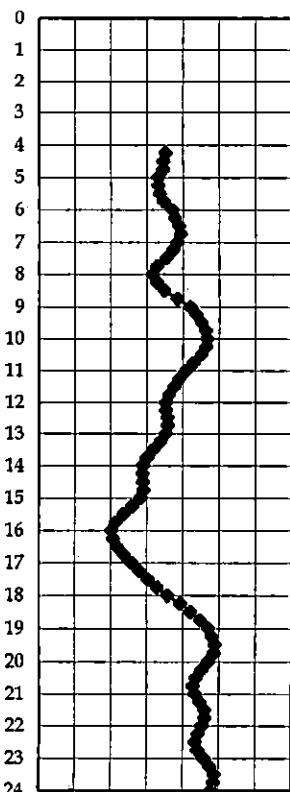
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E

S
A
M
P
L
I
N
G
M
E
T
H
O
DPenetration
Record
Split Spoon Blows

6" 6" 6" 6"

R
E
C
O
R
D
Y
(ppm)

0	2	Sand, fine to medium, brown, some silt, little gravel and organic material.	1	Split spoon	9	7	6	6	16"	0
2	4	Same as above for 2 and 3 feet bgs; 4 feet bgs. - sandy clay, medium brown sand and black clay	2	Split spoon	5	5	4	4	16"	0
4	6	Peat (black clay with organic material) with a few lenses of sand (medium brown) approx. 6 inches. Wet at 5 feet (perched?).	3	Split spoon	1	1	2	2	15'	0
6	8	Same as above.	4	Split spoon	2	2	2	2	24"	0
8	10	Same as above.	5	Split spoon	1	1	2	2	24"	0
10	12	Peat (black silts, clay with organic material); medium gray to dark gray, dry to moist.	6	Split spoon	2	2	1	1	23"	0
12	14	Same as above.	7	Split spoon	2	2	2	2	0"	
14	16	Peat (black organic material)	8	Split spoon	1	2	3	3	14"	0
16	18	Peat (dark gray and gray clay). Moist. Dry, sand, medium 6-inches from 16-1/2 to 17.	9	Split spoon	1	3	3	2	14"	0
18	20	0 to 6 inches - peat-clay; 6 to 10 inches - sand medium brown, moist; 10 to 24 inches - silty clay brown and gray, moist.	10	Split spoon	3	3	3	3	24"	0
20	22	0 to 6 inches - coarse sand, gray, trace gravel; 6 to 24 inches - silty clay, brown and gray, moist.	11	Split spoon	3	5	6	7	24"	0
22	24	0 to 6 inches - peat, dark gray clay; 6 to 8 inches - medium gray sand; 8 to 24 inches - brownish gray silty clay w/some orange silty clay (iron staining). Spoon is wet, but clay portion is dry to moist.	12	Split spoon	3	4	5	7	24"	0

Depth of First Groundwater Encountered:

nr - not recorded

Comments: Completion Details:

CRA

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-31D

Project Number: 7462

Driller: J. Jaworski

Date Start 9/15/98 10:00 a.m.

Client: OxyChem, Glenn Springs

Drilling Method: Hollow Stem Auger

Date Completed:

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: J. Garges, B. Foulke

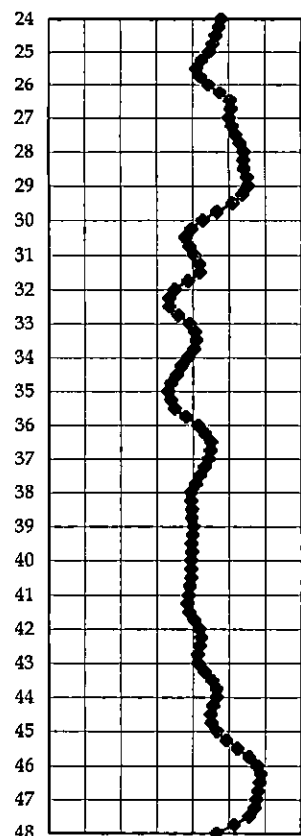
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E
#S
A
M
P
L
E
#M
P
L
I
GE
N
DPenetration
Record
Split Spoon Blows

6"

6"

6"

6"

R
E
C
O
V
E
R
Y

24"

(ppm)

P
I
DNotes
and
Comments:Depth of First Groundwater Encountered:
nr - not recorded
Completion Details:

CRA

Project Name: OxyChem - Delaware City

Project Number: 7462

Client: OxyChem, Glenn Springs

Location: Delaware City, Delaware

Drilling Contractor: ADT- MidAtlantic, Inc.

Driller: J. Jaworski

Drilling Method: Hollow Stem Auger

Surface Elevation:

Hole Designation: A-31D

Date Started: 9/15/98 10:00 a.m.

Date Completed: 10/13/98

CRA Supervisor: J. Garges, B. Foulke

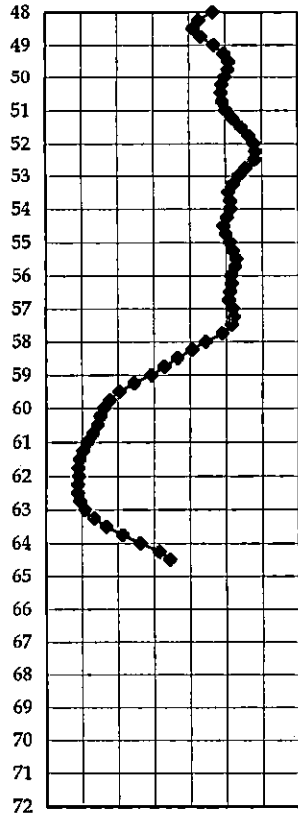
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E
#S
A
M
P
L
E
#M
T
H
O
D
GPenetration
Record
Split Spoon Blows

6" 6" 6" 6"

R
E
C
O
V
E
R
YP
I
D

(ppm)

Notes
and
Comments:

Depth of First Groundwater Encountered:

nr - not recorded

Completion Details:

CRA

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-33D

Project Number: 7462

Driller: J. Jaworski

Date Started: 9/18/98

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" HSA

Date Completed:

Location: Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)

Order of Descriptors:

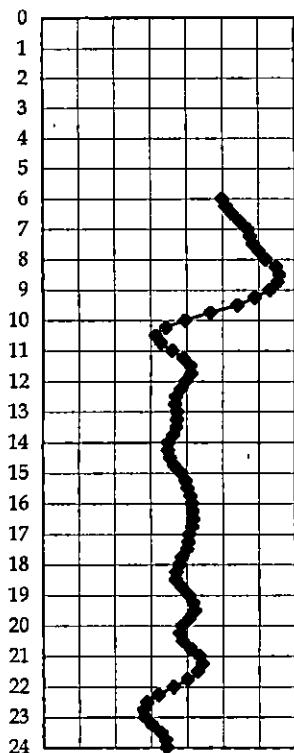
Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E
#S
A
M
P
L
E
#M
P
L
I
N
GE
N
GT
H
O
DP
E
N
GR
E
C
O
R
DS
P
L
I
T
S
P
O
O
N
B
L
O
W
S6"
6"
6"
6"

18"

P
I
D

(ppm)

0 10 20 30 40 50 60 70

Notes
and
Comments:Depth of First Groundwater Encountered:
nr - not recorded
Completion Details:

CRA

STRATIGRAPHIC AND GEOPI

AL (OVERBURDEN)

Project Name: Phase II RFI

Project Number: 7462

Client: Occidental Chemical Corporation

Location: Delaware City, Delaware

Drilling Contractor: ADT- MidAtlantic, Inc.

Driller: J. Jaworski

Drilling Method: Hollow Stem Auger

Surface Elevation:

Hole Designation: A-33D

Date Started: 9/18/98

Date Completed:

CRA Supervisor: B. Foulke

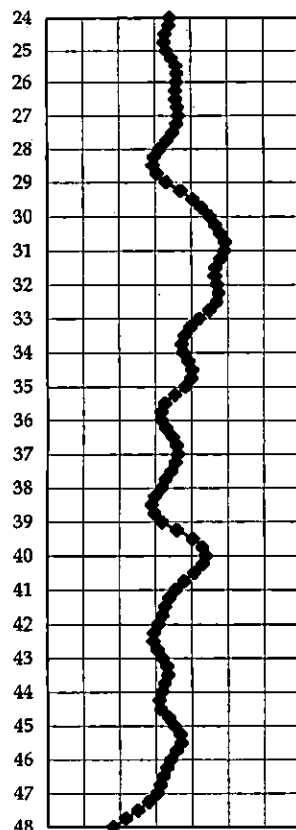
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary Descriptors

S
A
M
P
L
E
#S
A
M
P
L
I
N
GM
T
H
O
DPenetration
Record
Split Spoon Blows

6" 6" 6" 6"

R
E
C
O
V
E
R
Y

(ppm)

P
I
D

24

26

0 to 18 inches - sandy clay, fine-medium sand reddish-brown and gray clay, trace of gravel, moist.

13

split spoon

5

7

8

6

18"

0

26

28

0 to 24 inches - silty clay, gray with traces of gravel, moist.

14

split spoon

8

10

13

14

24"

0

28

30

0 to 16 inches - same as above, some lenses of brown silty/sand from 14 to 16 inches.

15

split spoon

9

12

17

19

16"

0

30

32

0 to 6 inches- gray sandy clay, moist, trace of gravel; 6 to 18 inches- reddish brown sandy clay, trace gravel, moist; 18 to 24 inches- black clay w/ gray sand (peat), moist.

16

split spoon

2

3

4

5

24"

0

32

34

0 to 12 inches - black clay and gry sand, moist; 12 to 24 inches - dark gray clay and sand, moist.

17

split spoon

3

4

4

6

24"

0

34

36

0 to 6 inches- dark gray clay, moist; 6 to 20 inches - brown, fine to medium sand, some clay, wet.

18

split spoon

3

4

6

8

20"

0

36

38

0 to 18 inches - brownish gray, sandy clay, little organic material (peat), wet.

19

split spoon

7

11

11

9

18"

0

38

40

0 to 12 inches - brown and black clay and sand, little organic material, moist; 12 to 18 inches tan, med to coarse sand, moist; 18 to 24 inches - brown sandy clay, moist.

20

split spoon

5

6

6

7

24"

0

40

42

Empty, try again;
0 - 12 inches - gray and black clay, some organic material, moist; 12 to 18 inches - brownish gray, medium sand, wet.

21

split spoon

18

0

42

44

0 to 3 inches - brown and gray, medium sand, moist; 3 to 6 inches - gray and black, clay, moist; 6 to 9 inches - black, clay, little organic material, dry; 9 to 24 inches - gray and brown, medium sand, moist (Colombia)

22

split spoon

7

8

9

11

24"

0

44

46

0 to 3 inches - gray and brown, med. Sand, moist; 3 to 24 inches - Gray and brown, sandy clay, moist (Colombia)

23

split spoon

7

8

9

14

24"

0

46

48

0 to 18 inches - orangish brown and gray, medium to coarse sand, little gravel, wet (Columbia Fm)

24

split spoon

7

9

11

11

18"

0

Notes
and
Comments:

Depth of First Groundwater Encountered:
nr - not recorded
Completion Details:

CRA

STRATIGRAPHIC AND GEOLOGICAL (OVERBURDEN)

Page 3 of 3

Project Name: OxyChem - Delaware City
Project Number: 7462
Client: OxyChem - Glenn Springs
Location: Delaware City, Delaware

Drilling Contractor: ADT- MidAtlantic, Inc.
Driller: J. Jaworski
Drilling Method: 6-5/8" Hollow Stem Auger
Surface Elevation:

Hole Designation: A-33D
Date Started: 9/18/98 11:00
Date Completed:
CRA Supervisor: J. Garges

GEOPHYSICAL LOG		LITHOLOGY		Stratigraphic Intervals (depths in ft bgs)		SAMPLE DESCRIPTION		SAMPLE DETAILS									
Natural Gamma Log (CPS)		F	R	O	M	T	O	Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
												6"	6"	6"	6"		
48								Same as above.	25	split spoon	7	9	8	11	18"	0	
49								Same as above.	26	split spoon	3	4	4	7	18"	0	
50								Same as above.	27	split spoon	7	9	10	14	24"	0	
51								Same as above.	28	split spoon	3	4	5	5	24"	0	
52								Same as above.	29	split spoon	10	11	10	11	24"	0	
53								Same as above.	30	split spoon	15	12	11	10	24"	0	
54								Same as above.	31	split spoon	3	4	7	9	24"	0	
55								Same as above.	32	split spoon	12	9	8	6	22"	0	
56								Same as above.	33	split spoon	7	8	11	15	24"	0	
57								Same as above.	34	split spoon	14	14	26	30	24"	0	
58								Same as above, and gravel.	35	split spoon	6	16	19	22	24"	0	
59								0 to 12 inches - same as above; 12 to 24 inches - red, gray, brown, and white clay, dry. (Potomac Formation)									
60																	
61																	
62																	
63																	
64																	
65																	
66																	
67																	
68																	
69																	
70																	
71																	
72																	
CRA		Notes and Comments:		Depth of First Groundwater Encountered: nr - not recorded Completion Details:													

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-34D

Project Number: 7462

Driller: J. Jaworski

Date Started: 9/23/98 1430

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" HSA

Date Completed:

Location: Delaware

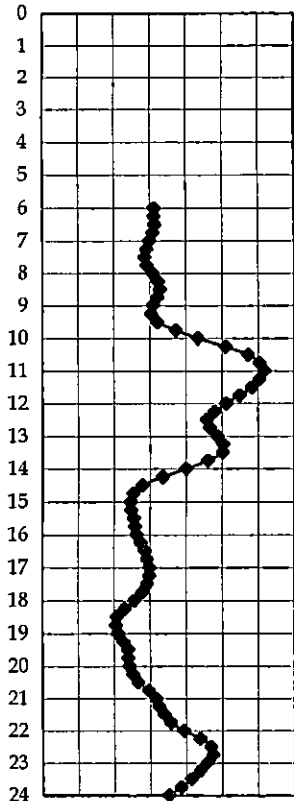
Surface Elevation:

CRA Supervisor: J. Garges

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



CRA

SAMPLE DESCRIPTION

SAMPLE DETAILS

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E
#S
A
M
P
L
E

M
A
T
H
O
D
N
GPenetration
Record
Split Spoon Blows

6" 6" 6" 6"

R
E
C
O
V
E
R
Y
(ppm)Notes
and
Comments:Depth of First Groundwater Encountered:
nr - not recorded
Completion Details:

Project Name: Phase II RFI

Project Number: 7462

Client: Occidental Chemical Corporation

Location: Delaware City, Delaware

Drilling Contractor: ADT- MidAtlantic, Inc.

Driller: J. Jaworski

Drilling Method: Hollow Stem Auger

Surface Elevation:

Hole Designation: A-34D

Date Started: 9/23/98 1430

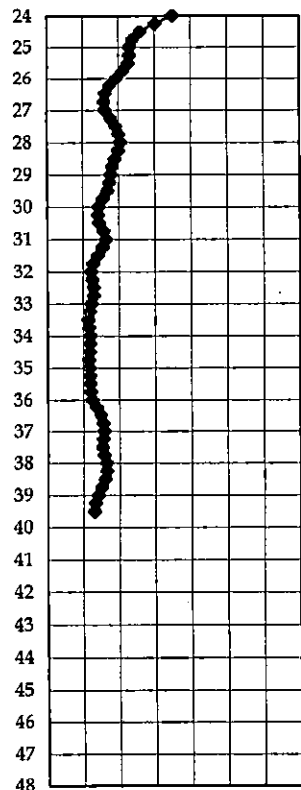
Date Completed:

CRA Supervisor: J. Garges

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



SAMPLE DESCRIPTION

SAMPLE DETAILS

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
MT
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E
#S
A
M
P
L
E
#M
E
T
H
O
DPenetration
Record
Split Spoon Blows

6"

6"

6"

6"

R
E
C
O
V
E
R
Y

(ppm)

Notes
and
Comments:Depth of First Groundwater Encountered:
nr - not recorded
Completion Details:

CRA

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-35D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/1/98 14:30

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" HSA

Date Completed:

Location: Delaware

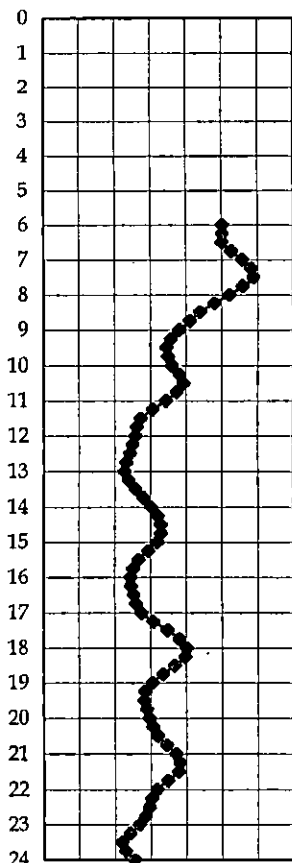
Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



SAMPLE DESCRIPTION

SAMPLE DETAILS

L I T H O L O G Y	Stratigraphic Intervals (depths in ft bgs)		Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
	F R O M	T O										
	0	2	Imported crusher run stone and rip-rap									
	2	4	0 to 1 inch - gravel, fines and moist; 1 to 11 inches - silts and trace clay, low plasticity, moist, brown, organic material; 11 to 14 inches - black, sandy gravel, wet; 14 to 16 inches - gravel with fines, gray and brown, dry.	1	split spoon		4	6	12	10	16"	0
	4	6	0 to 1 inch - gravel with fines, gray and brown, dry; 1 - 15 inches - brown silt with low clay (low plasticity), dry-moist traces of gray clay, silt.	2	split spoon		6	7	7	11	15"	0
	6	8	0 to 16 inches - brown silt with increasing amounts of gray silt, dry-moist.	3	split spoon		10	11	14	16	16"	0
	8	10	0 to 8 inches - brown silt and gray silt/fine sand, dry-moist; 8 to 14 inches - gray silt, fine sand, with gravel, dry-moist; 14 to 24 inches - fine sand (brown) with gravel and some reddish/black gravel size pieces of cemented sand (iron deposits) moist.	4	split spoon		8	9	13	16	24"	0
	10	12	0 to 4 inches - fine-medium brown sand w/gravel, wet, trace clay; 4 to 8 inches - fine-medium brown sand and clay, wet, good plasticity; 8 to 10 inches - fine-medium brown sand, wet.	5	split spoon		3	2	2	5	10"	0
	12	14	0 to 18 inches - fine-medium brown sand and clay, good plasticity, wet; 18 to 24 inches - well graded fine-medium brown sand, wet.	6	split spoon		4	5	7	9	24"	0
	14	16	0 to 20 inches - fine-medium sand, brown w/lenses of fine-medium sand and clay, wet.	7	split spoon		4	5	6	10	20"	0
	16	18	0 to 2 inches - same as above; 2 to 8 inches - same as above w/gravel size pieces of cemented sand (black w/reddish staining); increasing clay, wet; 8 to 16 inches - fine sand brown and clay, good plasticity, wet.	8	split spoon		7	4	6	8	16"	0
	18	20	0 to 24 inches - fine-medium brown sand, traces of gravel, wet.	9	split spoon		7	11	11	14	24"	0
	20	22	0 to 18 inches - same as above; 12 to 18 inches - contained pieces of cemented sand, reddish/burnt orange and black, wet.	10	split spoon		2	3	6	8	18"	0
	22	24	0 to 12 inches - same as above; 12 to 18 inches - brown and reddish/orange sand with gravel, wet; 18 to 24 inches - medium, brown	11	split spoon		7	9	10	13	24"	0
Notes and Comments:		Depth of First Groundwater Encountered: nr - not recorded Completion Details:										

CRA

CRA Supervisor: B. Foulke

CRA

STRATIGRAPHIC AND GEOLOGICAL (OVERBURDEN)

Page 1 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-36D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/13/98

Client: Occidental Chemical Corporation

Drilling Method: Hollow Stem Auger

Date Completed: 10/13/98

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

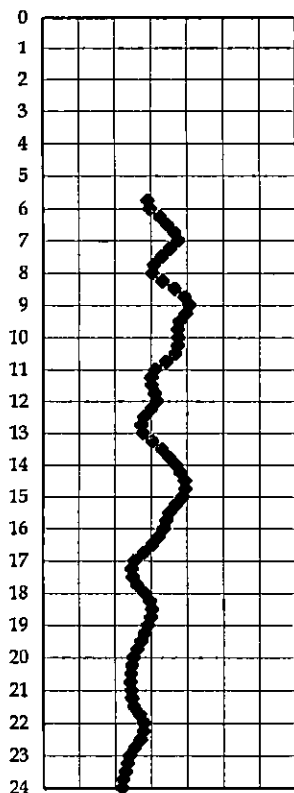
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



L
I
T
H
O
L
O
G
Y

Stratigraphic
Intervals
(depths in ft bgs)

F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary Descriptors

S
A
M
P
L
E
#

S
A
M
P
L
I
N
G

M
E
T
H
O
D

Penetration
Record
Split Spoon Blows

6" 6" 6" 6"

R
E
C
O
R
D
Y

P
I
D
(ppm)

0	2	0 - 2" gravel and sand, fine, black, moist.	1	split spoon	1	3	4	3	16	0
2	4	2 - 16" sand, medium, brown, moist (COLUMBIA FORMATION).	2	split spoon	4	3	3	4	15	0
4	6	0 - 15" sand, medium, brown, moist.	3	split spoon	4	7	8	11	10	0
6	8	0 - 10" gravel and sand, medium, brown, moist.	4	split spoon	7	9	10	11	16	0
8	10	0 - 16" sand, medium, orange-brown, moist. (sand becoming finer and lighter in color with depth)	5	split spoon	4	5	6	9	12	0
10	12	0 - 12" sand, fine to medium, tan, trace black spots, moist.	6	split spoon	4	5	6	9	12	0
12	14	0 - 20" same as above.	7	split spoon	11	3	6	3	22	0
14	16	20 - 22" sand, fine, orange-brown, trace iron deposits, moist.	8	split spoon	4	6	6	7	24	0
16	18	0 - 10" same as above.	9	split spoon	4	6	6	7	24	0
18	20	10 - 24" sand, fine, tan and orange, moist.	10	split spoon	7	6	7	8	16	0
20	22	0 - 16" same as above.	11	split spoon	nr	nr	nr	nr	nr	nr
22	24	same as above.	12	split spoon	nr	nr	nr	nr	nr	nr
24	26	same as above.	13	split spoon	nr	nr	nr	nr	nr	nr
26	28	same as above.	14	split spoon	nr	nr	nr	nr	nr	nr
28	30	0 - 18" same as above, wet, water at 20.5' bgs.	15	split spoon	4	7	9	10	18	0
30	32	0 - 24" same as above.	16	split spoon	4	6	6	8	24	0

Notes
and

Comments:

Depth of First Groundwater Encountered: 20.5' bgs

nr - not recorded

Completion Details: 0 - 29', 4" PVC casing; 29 - 39', 4" PVC 10-slot screen.

CRA

STRATIGRAPHIC AND GEOLOGICAL (OVERBURDEN)

Page 2 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-36D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/13/98

Client: Occidental Chemical Corporation

Drilling Method: Hollow Stem Auger

Date Completed: 10/13/98

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

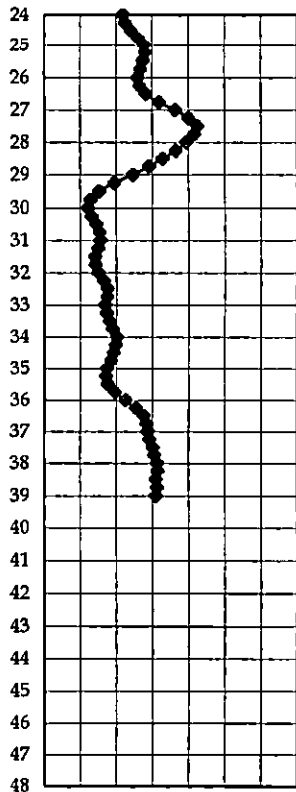
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



L
I
T
H
O
L
O
G
Y

Stratigraphic
Intervals
(depths in ft bgs)

F
R
O
M
T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary Descriptors

S
A
M
P
L
E
#

S
A
M
P
L
I
N
G

M
E
T
H
O
D

Penetration
Record
Split Spoon Blows

6" 6" 6" 6"

R
E
C
O
V
E
R
Y

P
I
D
(ppm)

24	26	0 - 24" sand, fine, tan and orange, wet.	13	split spoon	5	3	4	7	24	0
26	28	same as above.	14	split spoon	nr	nr	nr	nr	nr	nr
28	30	same as above.	15	split spoon	nr	nr	nr	nr	nr	nr
30	32	0 - 15" sand, fine to medium, brown, little quartz and mica fragments, wet.	16	split spoon	5	6	6	8	15	0
32	34	0 - 24" same as above, trace gravel.	17	split spoon	6	8	11	9	24	0
34	36	same as above.	18	split spoon	nr	nr	nr	nr	nr	nr
36	38	same as above.	19	split spoon	nr	nr	nr	nr	nr	nr
38	40	0 - 8" sand, fine to med., brown and gravel. 8 - 12" med. to coarse and gravel, iron staining. 12 - 14" silty clay, black.	20	split spoon	16	15	11	10	14	0
40	42	0 - 18" sand, fine to medium, brown, wet. 18 - 24" silty clay, greenish-black, trace mica, moist.	21	split spoon	11	5	6	5	24	0
42	44	0 - 20" wash. 20 - 24" silty clay, greenish-black, trace mica, moist.	22	split spoon	12	12	13	16	24	0
44	46	same as above.	23	split spoon	nr	nr	nr	nr	nr	nr
46	48	same as above.	24	split spoon	nr	nr	nr	nr	nr	nr

Notes
and

Comments:

Depth of First Groundwater Encountered: 20.5' bgs

nr - not recorded

Completion Details: 0 - 29', 4" PVC casing; 29 - 39', 4" PVC 10-slot screen.

CRA

STRATIGRAPHIC AND GEOLOGICAL (OVERBURDEN)

Page 3 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-36D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/13/98

Client: Occidental Chemical Corporation

Drilling Method: Hollow Stem Auger

Date Completed: 10/13/98

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG		Stratigraphic Intervals (depths in ft bgs)		SAMPLE DESCRIPTION	SAMPLE DETAILS								
Natural Gamma Log (CPS)				Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
0 10 20 30 40 50 60 70		F R O M	T O					6"	6"	6"	6"		
48		48	50	0 - 24" sand, fine, tan and orange, wet.	25	split spoon		8	11	19	22	24	0
49													
50		50	52	0 - 18" same as above.	26	split spoon		9	8	15	13	18	0
51													
52		52	54	0 - 24" silty clay, greenish-black, with fine pieces of mica, dry to m	27	split spoon		16	17	17	24	24	0
53				POTOMAC FORMATION									
54		54	56	0 - 6" same as above.	28	split spoon		5	8	18	17	24	0
55				6 - 24: clay, reddish-brown and gray, dry to moist.									
56													
57													
58													
59													
60													
61													
62													
63													
64													
65													
66													
67													
68													
69													
70													
71													
72													
CRA		Notes and Comments:		Depth of First Groundwater Encountered: 20.5' bgs nr - not recorded Completion Details: 0 - 29', 4" PVC casing; 29 - 39', 4" PVC 10-slot screen.									

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 1 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-37D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/8/98 12:00 pm

Client: OxyChem - Glenn Springs

Drilling Method: HS Auger

Date Completed:

Location: Delaware

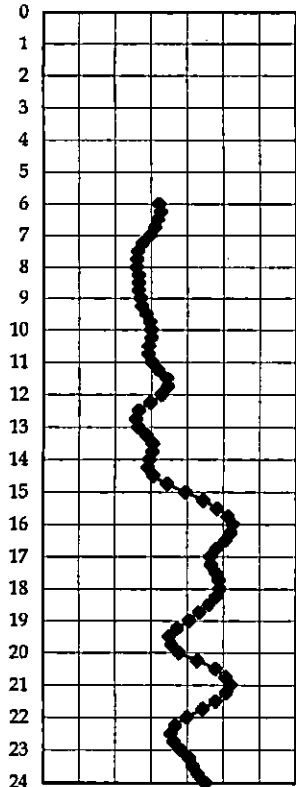
Surface Elevation:

CRA Supervisor: J. Garges

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



CRA

SAMPLE DESCRIPTION

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary Descriptors

SAMPLE DETAILS

S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
			6"	6"	6"	6"		
1	split spoon		no counts due to heavy rain on 10/8				PID not on	
2	split spoon		no counts due to heavy rain on 10/8					
3	split spoon		no counts due to heavy rain on 10/8					
4	split spoon		no counts due to heavy rain on 10/8					
5	split spoon		no counts due to heavy rain on 10/8					
6	split spoon		no counts due to heavy rain on 10/8					
7	split spoon		no counts due to heavy rain on 10/8				24"	
8	split spoon		no counts due to heavy rain on 10/8				24"	
9	split spoon		no counts due to heavy rain on 10/8				10"	
10	split spoon		no counts due to heavy rain on 10/8				12"	
11	split spoon		light rain on 10/9				14"	
12	split spoon		no counts due to light rain				12"	

Notes
and

Comments:

Depth of First Groundwater Encountered:

nr - not recorded

Completion Details:

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 2 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-37D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/13/98

Client: Occidental Chemical Corporation

Drilling Method: Hollow Stem Auger

Date Completed: 10/13/98

Location: Delaware City, Delaware

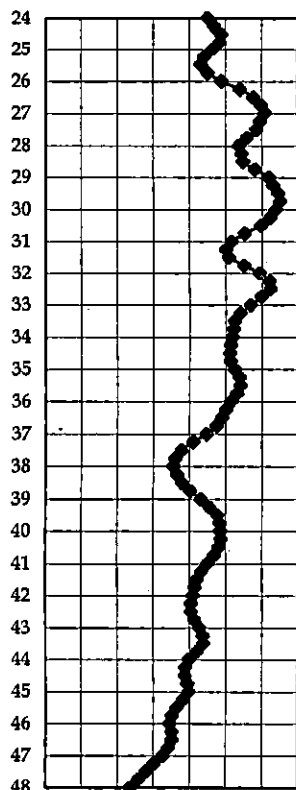
Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



SAMPLE DESCRIPTION

SAMPLE DETAILS

L I T H O L O G Y	Stratigraphic Intervals (depths in ft bgs)		Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
	F R O M	T O					6"	6"	6"	6"		
	24	26	Sandy clay, dark gray, up to 300 ppm (Mica flakes, greenish tint, "Mechantville?"	13	split spoon		over 2,000ppm in hole				24"	
	26	28	Same as above, up to 40 ppm	14	split spoon		no counts due to light rain				20"	
	28	30	Same as above, up to 30 ppm	15	split spoon		no counts due to light rain				18"	
	30	32	Sandy clay, dark gray and greenish gray, mica flakes, dry.	16	split spoon		no counts due to light rain				24"	60*
	32	34	Same as above.	17	split spoon		no counts due to light rain				24"	50*
	34	36	Same as above; (white clay last 4 inches of spoon)	18	split spoon		no counts due to light rain				24"	20
	36	38	Sandy clay, dark gay to greenish gray (0-12"), white (12-24"); 2-inch sand stringer at 18-20", dry.	19	split spoon		no counts due to light rain				24"	45
	38	40	Same as last spoon; may be some interval.	20	split spoon		no counts due to light rain				24"	13
	40	42	Fine to medium sand, white to off-white (buff), moist.	21	split spoon		no counts due to light rain				22"	5
	42	44	Same as above; (Magothy or upper Potomac sands, not UHZ).	22	split spoon		no counts due to light rain				24"	20
	44	46	Same as above.	23	split spoon		no counts due to light rain				24"	10
	46	48	Same as above (0-18"); 1/2 inch layer of gravel (angular) w/orange red staining, (18-1/2 -24"), medium sand, white, tan, brown w/little water.	24	split spoon		no counts due to light rain				24"	10

Notes
and
Comments:nr - not recorded
Completion Details:

CRA

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 3 of 3

Project Name: OxyChem - Delaware City
 Project Number: 7462
 Client: OxyChem - Glenn Springs
 Location: Delaware City, Delaware

Drilling Contractor: ADT- MidAtlantic, Inc.
 Driller: J. Jaworski
 Drilling Method: 6-5/8" Hollow Stem Auger
 Surface Elevation:

Hole Designation: A-37D
 Date Started: 10/8/98 12:00 pm
 Date Completed:
 CRA Supervisor: J. Garges

GEOPHYSICAL LOG		Stratigraphic Intervals (depths in ft bgs)		SAMPLE DESCRIPTION	SAMPLE DETAILS				P I D (ppm)		
L I T H O L O G Y	F R O M	T O	Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L E	Penetration Record Split Spoon Blows				R E C O V E R Y	
						6"	6"	6"	6"		
Natural Gamma Log (CPS) 	48	50	Medium sand, white, tan, brown, wet.	25	split spoon	no counts due to light rain				11"	10
	50	52	Same as above.	26	split spoon	no counts due to light rain				13"	7
	52	54	Same as above.	27	split spoon	no counts due to light rain				7"	3
	54	56	Same as above.	28	split spoon	no counts due to light rain				21"	25
	56	58	Same as above.	29	split spoon	no counts due to light rain				18"	20
	58	60	Same as above.	30	split spoon	no counts due to light rain				12"	20
	60	62	Same as above.	31	split spoon	no counts due to light rain				12"	10
Notes and Comments:		Depth of First Groundwater Encountered: nr - not recorded Completion Details:									

CRA

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 1 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-38D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/5/98 10:00

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" HSA

Date Completed:

Location: Delaware

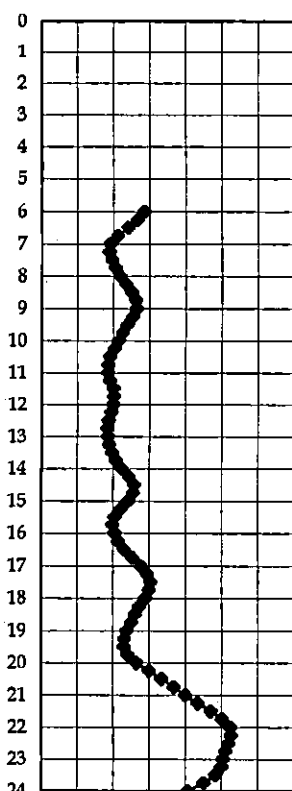
Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



SAMPLE DESCRIPTION

SAMPLE DETAILS

L I T H O L O G Y	Stratigraphic Intervals (depths in ft bgs)		Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
	F R O M	T O										
	0	2	0 to 2 inches - roots and organic material, dry; 2 to 18 inches - fine reddish/brown sand, dry.	1	split spoon		4	5	8	10	18"	0
	2	4	0 to 10 inches - fine brown sand, wet at 5" (43 ppm in wet soil), water at 4'bgs	2	split spoon		6	4	2	2	10"	43
	4	6	0 to 11 inches - fine brown sand, trace of gravel, wet.	3	split spoon		1	1	1	1	11"	65
	6	8	0 to 4 inches - fine brown sand, trace of gravel, wet (10 ppm); 4 to 8 inches - dark brown silty sand, wet (24 ppm); 8 to 12 inches - fine brown	4	split spoon		1	1	1	1	12"	24
	8	10	0 to 8 inches - medium-brown sand, wet (21 ppm)	5	split spoon		1	1	4	6	8"	21
	10	12	Brown, medium sand, wet.	6	split spoon		5	6	10	13	17"	10
	12	14	Medium sand, brown, trace of gravel, wet; 3 ppml vinyl chloride (Draeger Tube) inside augers	7	split spoon		11	13	17	19	24"	9
	14	16	Medium sand, brownish/burnt orange, traces of gravel; 0 to 6 inches - 10 ppm; 6 to 18 inches 0 ppm	8	split spoon		8	11	23	20	18"	10
	16	18	Brown, medium sand, wet, traces of gravel.	9	split spoon		9	16	19	23	24"	23
	18	20	0 to 22 inches - brown, medium sand, wet, traces of gravel; 22 to 24 inches - medium-coarse sand and gravel, wet (467 ppm)	10	split spoon		10	11	13	12	24"	467
	20	22	0 to 3 inches - brown, silty clay, moist (560 ppm); 3 to 14 inches - olive gray/burnt orange layers silty clay, moist (1567 ppm)	11	split spoon		3	3	3	6	14"	1567
	22	24	0 to 24 inches - dark gray, silty clay, moist.	12	split spoon		3	5	6	7	22"	210

Notes
and
Comments:

Depth of First Groundwater Encountered:

nr - not recorded

Completion Details:

CRA

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-38D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/5/98

Client: Occidental Chemical Corporation

Drilling Method: Hollow Stem Auger

Date Completed:

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

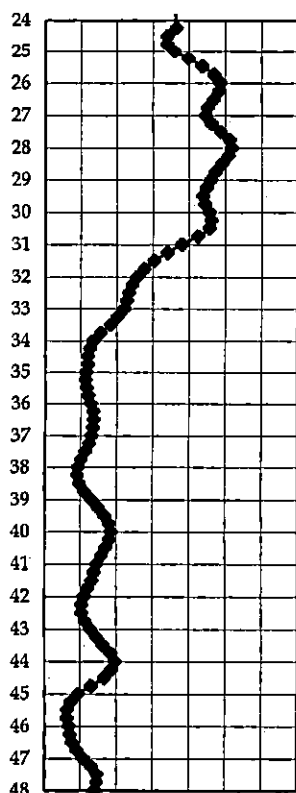
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70

L
I
T
H
O
L
O
G
YStratigraphic
Intervals
(depths in ft bgs)F
R
O
MT
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary DescriptorsS
A
M
P
L
E
#S
A
M
P
L
E
#M
T
H
O
D
#Penetration
Record
Split Spoon BlowsR
E
C
O
V
E
R
YP
I
D
(ppm)

24

26

0 to 24 inches - dark gray, silty clay, moist.

13

split spoon

12

14

19

21

24"

121

26

28

0 to 24 inches - dark gray, silty clay, moist.

14

split spoon

7

8

12

14

8"

36

28

30

0 to 24 inches - dark gray, silty clay, moist.

15

split spoon

11

13

16

17

22"

1

30

32

0 to 14 inches - dark gray, silty clay, moist (9 ppm); 14 to 16 inches - fine white sand, moist (3 ppm); 16 to 22 inches - fine brown sand, moist (3 ppm)

16

split spoon

4

6

9

12

22"

9

32

34

0 to 18 inches - fine brown sand, wet (20 ppm)

17

split spoon

9

11

17

19

28"

20

34

36

0 to 18 inches - fine brown sand, wet (20 ppm)

18

split spoon

8

10

14

21

21"

22

36

38

0 to 18 inches - fine brown sand, wet (31 ppm); 18 to 24 inches - light gray/yellow sand- fine, (0 ppm), wet

19

split spoon

8

13

15

16

24"

31

38

40

0 to 8 inches - yellow/white sand, fine, wet.

20

split spoon

4

3

8

6

8"

5

40

42

0 to 4 inches - yellow/white sand, fine, wet.

21

split spoon

6

5

4

4

4"

3.5

42

44

0 to 5 inches - yellow/white sand, fine, wet; 5 to 10 inches - fine sand, turning brown with red lenses (3 ppm) wet.

22

split spoon

13

5

7

11

10"

18

44

46

0 to 10 inches fine sand, yellow with reddish/brown streaks, wet.

23

split spoon

9

11

16

21

6"

10

46

48

0 to 8 inches - fine sand, yellow with reddish/brown streaks, wet.

24

split spoon

8

12

14

15

8"

3.5

Notes
and
Comments:nr - not recorded
Completion Details:

CRA

STRATIGRAPHIC AND GEOPHYSICAL LOG (OVERBURDEN)

Page 3 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-38D

Project Number: 7462

Driller: J. Jaworski

Date Started: 10/5/98

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" Hollow Stem Auger

Date Completed:

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG		Stratigraphic Intervals (depths in ft bgs)		SAMPLE DESCRIPTION		SAMPLE DETAILS		Penetration Record		Split Spoon Blows		RECOVER Y		P I D (ppm)	
Natural Gamma Log (CPS)				Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors		S A M P L E N G		S A M P L E N G		S A M P L E N G		S A M P L E N G		S A M P L E N G	
48															
49															
50															
51															
52															
53															
54															
55															
56															
57															
58															
59															
60															
61															
62															
63															
64															
65															
66															
67															
68															
69															
70															
71															
72															
CRA		Notes and Comments:		Depth of First Groundwater Encountered: nr - not recorded Completion Details:											

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 1 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADTMA

Hole Designation: A-39D

Project Number: 7462

Driller: J. Jaworski

Date Started: 9/28/98

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" HSA

Date Completed:

Location: Delaware

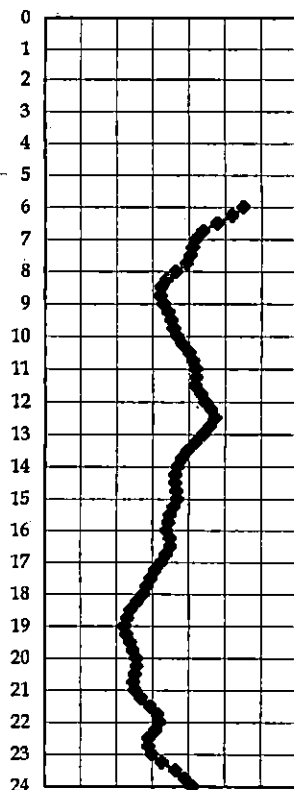
Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



SAMPLE DESCRIPTION

SAMPLE DETAILS

L I T H O L O G Y	Stratigraphic Intervals (depths in ft bgs)		Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
	F R O M	T O					6"	6"	6"	6"		
	0	2	Gravel and brown sand, dry.	1	split spoon		4	6	12	13	17"	0
	2	4	Medium-brown sand, dry.	2	split spoon		19	17	15	14	18"	0
	4	6	Fine, medium brown sand, dry, traces of silty/clay-dark gray and some pieces of quartz.	3	split spoon		15	16	15	14	18"	0
	6	8	0 to 18 inches - Fine, medium-brown sand, with gray silts and clays, dry.	4	split spoon		6	10	10	12	18"	0
	8	10	0 to 11 inches - medium-sand, brown, moist.	5	split spoon		8	10	11	13	11"	0
	10	12	0 to 16 inches - medium-sand, brown, moist.	6	split spoon		5	6	8	6	16"	0
	12	14	0 to 22 inches - fine to medium, brown sand, traces of clay, moist.	7	split spoon		1	11	12	12	22"	0
	14	16	0 to 6 inches - fine to medium, brown sand, traces of clay, moist; 6 to 12 inches - fine to medium, brown sand, traces of clay, with white quartz	8	split spoon		7	11	7	7	12	0
	16	18	0 to 10 inches/6 to 12 inches - Fine to medium, brown sand, traces of clay, moist	9	split spoon		6	7	5	6	10"	0
	18	20	0 to 22 inches - medium brown sand with traces of gravel.	10	split spoon		7	4	5	7	22"	0
	20	22	0 to 2 inches - medium-coarse brown sand, wet; 2 to 24 inches - black peat with organic material, moist, black clay and silt.	11	split spoon		2	1	1	2	24"	0
	22	24	0 to 19 inches - black silty-clay (peat) w/organic material, moist (0 -39 ppm); 19 to 24 inches - gray clay w/organic material, moist (0 ppm)	12	split spoon		9	7	7	6	24"	39

Notes
and
Comments:

Depth of First Groundwater Encountered:

nr - not recorded

Completion Details:

CRA

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 2 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-39D

Project Number: 7462

Driller: J. Jaworski

Date Started: 9/28/98

Client: Occidental Chemical Corporation

Drilling Method: Hollow Stem Auger

Date Completed:

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

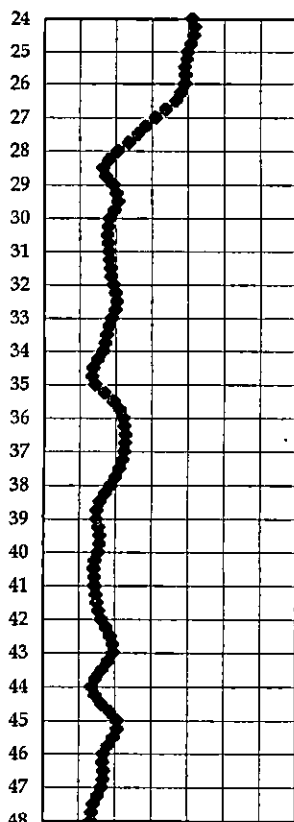
GEOPHYSICAL LOG

SAMPLE DESCRIPTION

SAMPLE DETAILS

Natural Gamma Log
(CPS)

0 10 20 30 40 50 60 70



L
I
T
H
O
L
O
G
Y

Stratigraphic
Intervals
(depths in ft bgs)

F
R
O
M

T
O

Order of Descriptors:

Primary Component/Secondary Components
Relative Density/Consistency, Grain
Size/Plasticity, Gradation/Structure, Color,
Moisture Content, Supplementary Descriptors

S
A
M
P
L
E
#

S
A
M
P
L
I
N
G

M
T
H
O
D

Penetration
Record
Split Spoon Blows

R
E
C
O
R
D
Y

P
I
D
(ppm)

Notes
and
Comments:

nr - not recorded
Completion Details:

CRA

STRATIGRAPHIC AND GEOPHYSICAL (OVERBURDEN)

Page 3 of 3

Project Name: OxyChem - Delaware City

Drilling Contractor: ADT- MidAtlantic, Inc.

Hole Designation: A-39D

Project Number: 7462

Driller: J. Jaworski

Date Started: 9/28/98 10:00 am

Client: OxyChem - Glenn Springs

Drilling Method: 6-5/8" Hollow Stem Auger

Date Completed:

Location: Delaware City, Delaware

Surface Elevation:

CRA Supervisor: B. Foulke

GEOPHYSICAL LOG		Stratigraphic Intervals (depths in ft bgs)		SAMPLE DESCRIPTION	SAMPLE DETAILS								
L I T H O L O G Y	F R O M	T O		Order of Descriptors: Primary Component/Secondary Components Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Color, Moisture Content, Supplementary Descriptors	S A M P L E #	S A M P L I N G	M E T H O D	Penetration Record Split Spoon Blows				R E C O V E R Y	P I D (ppm)
								6"	6"	6"	6"		
Natural Gamma Log (CPS) <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 5px;">0 10 20 30 40 50 60 70</div> </div>	48	50	0 to 4 inches - red and brown, medium sand; 4 to 16 inches - medium sand, some pieces cemented together in gravel size pieces (black in color)	25	split spoon	8	15	18	23	16"	0		
	50	52	Reddish/brown medium sand with traces of gravel (white stones).	26	split spoon	4	6	11	17	8"	0		
	52	54	Orangish/brown medium sand with gravel, wet.	27	split spoon	5	10	11	15	24"	0		
	54	56	Orangish/brown wet, medium sand with gravel (increasing in size) (0 to 15 ppm over entire spooned sample).	28	split spoon	17	10	10	13	13"	15		
	56	58	0 to 8 inches - brown, medium sand with gravel and some clay content (0-21 ppm); 8 to 18 inches - red and gray clay, layered (marbled, Potomac, 0	29	split spoon	4	8	12	16	18"	21		
Notes and Comments:		Depth of First Groundwater Encountered: nr - not recorded Completion Details:											

CRA

WELL CONSTRUCTION LOGS

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
Project No.: 7462
Client: Occidental Chemical Corporation
Location: Delaware City, Delaware

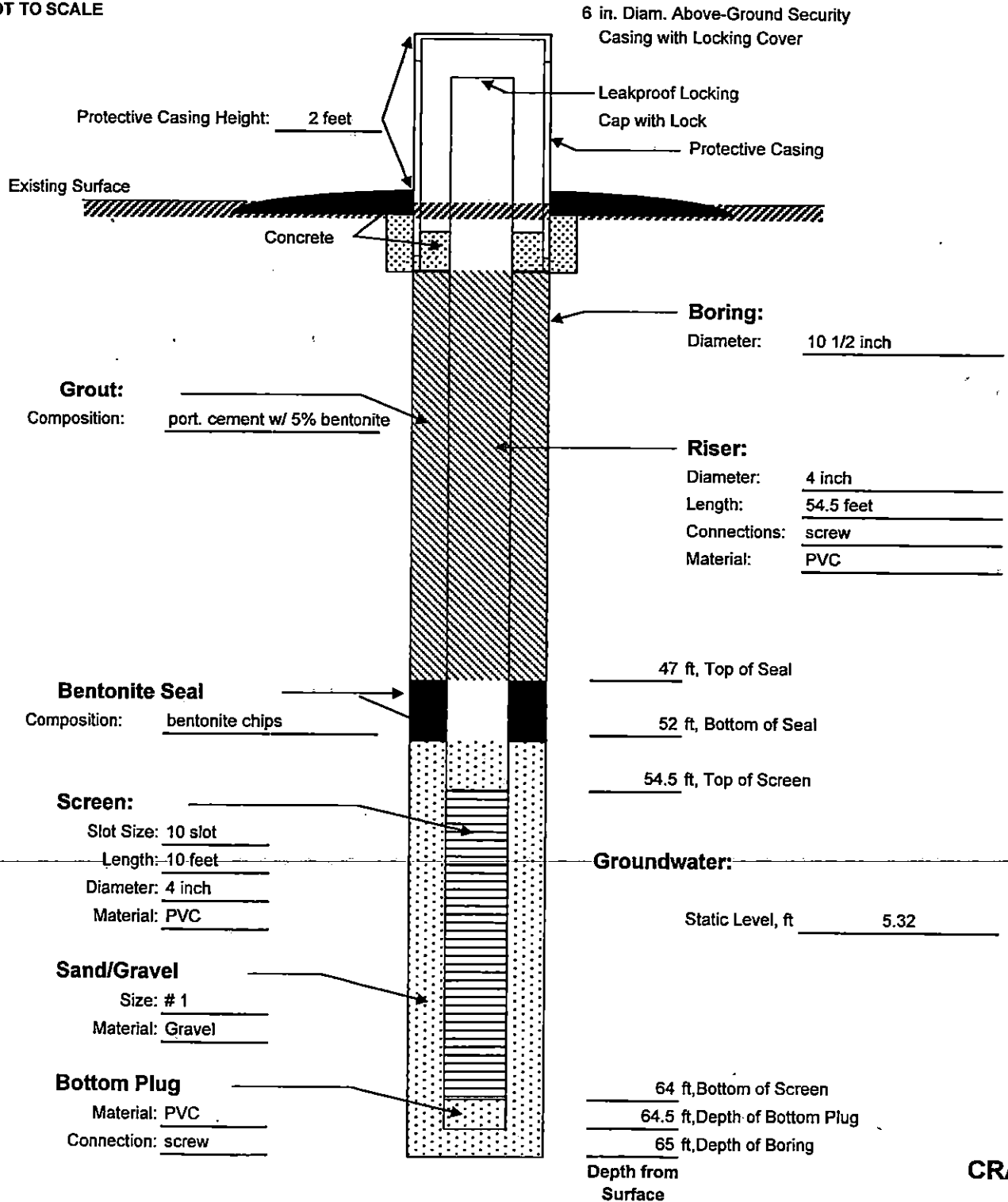
Hole Designation: A-31D
Date Completed: 9/17/98
Drilling Method: 6 5/8-inch HS Augers
CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 18.79'
ground: 15.64'
steel casing elevation: 18.83'

Northing: 583335.4090
Easting: 444466.8438

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

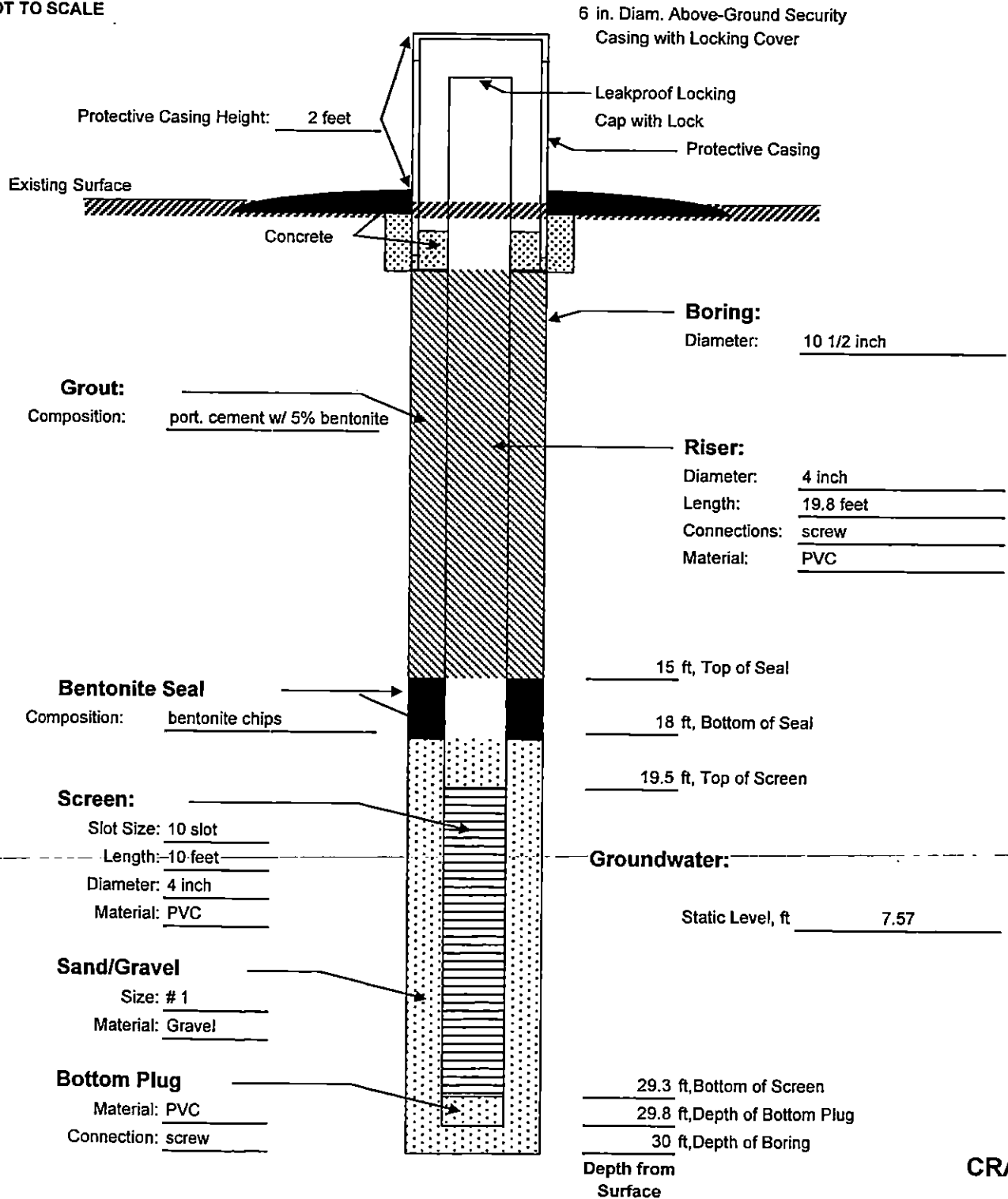
Hole Designation: A-310B
 Date Completed: 9/17/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 18.39'
 ground: 15.79'
 steel casing elevation: 18.63'

Northing: 583334.7649
 Easting: 444461.7695

NOT TO SCALE

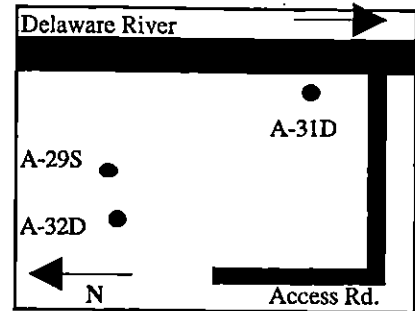


CRA

Environmental Resources Management

WO No: 72208.00.01 Date Completed 8 Sep 94
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 60 Diameter 12-inch/8-inch
 North Surface Elev _____ feet msl
 East Riser Elev _____ feet msl
 Screen PVC Length (ft) 15 Diameter 4-inch
 Slot Size 10 slot / 0.01-inch Stabilized DTW _____ feet TOC
 Riser PVC Length (ft) 45.0 Diameter 4-inch
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

A-32-D



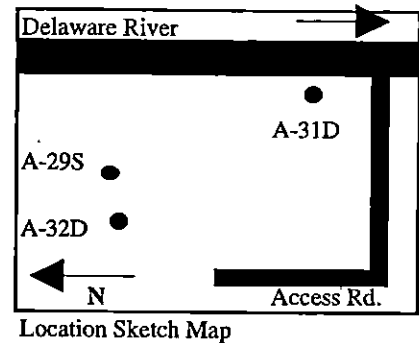
Location Sketch Map

Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
0			1	4, 5	0-2	7/24 0-7" SILT, sandy, medium orange-brown, dry.
				12, 15		
			2	12, 15	2-4	11/24 0-11" SILT, sandy, medium orange-brown, dry, with quartz pebbles.
				10, 10		
					4-6	12/24 0-3" SILT, sandy, orange-brown.
5			3	5 4		3-5" CLAY, silty, brown.
				3, 3		5-12" Clay, silty, black, soft, moist.
			4	2, 2	6-8	12/24 0-8" CLAY, silty, black.
				1, 1		8-12" SILT, clayey, medium to light tan, soft, wet, with gravel and rounded quartz pebbles.
10			5	1, 1	8-10	17/24 0-17" CLAY, silty, dk. grey to black, layered, micaceous.
				1, 1		
			6	1, 1	10-12	19/24 0-19" CLAY, silty, dk. grey to black, layered, very soft, moist, with trace plant material.
				1, 1		
			7	1, 1	12-14	20/24 0-20" CLAY, silty, dk. grey to black, layered, soft, wet to moist with trace plant material.
15				2, 2		
			8	wt. of hammer	14-16	24/24 0-24" CLAY, silty, dk grey to black, micaceous trace plant material.
			9	1, 2	16-18	12/24 0-12" CLAY, silty, dk grey to black, micaceous wet to moist with trace plant material.
				2, 1		
20			10	2, 1	18-20	16/24 0-14" CLAY, silty, dk. grey to black A/A.
				2, 1		14-16" PEAT, abundant plant material, trace clay.
			11	1, 1	20-22	24/24 0-24" PEAT, 100% plant material, saturated.
			12	1, 1	22-24	24/24 0-24" PEAT, 100% plant material, saturated.
25				1, 1		
			13	1, 1	24-26	24/24 0-24" PEAT, abundant plant material, with about 40% CLAY, silty, black, interlayered, wet.
				1, 1		
			14	1, 1	26-28	24/24 0-24" PEAT, abundant plant material, with CLAY, silty, black, interlayered, wet.
				1, 1		

Environmental Resources Management

A-32-D

WO No: 72208.00.01 Date Completed 8 Sep 94
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 60 Diameter 12-inch/8-inch
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen PVC Length (ft) 15 Diameter 4-inch
 Slot Size 10 slot / 0.01-inch Stabilized DTW feet TOC
 Riser PVC Length (ft) 45.0 Diameter 4-inch
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

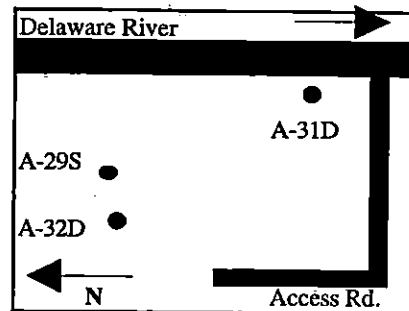


	Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
	30			15	1, 1	28-30	24/24 0-10" PEAT, 100% plant material, wet.
					1, 1		10-24" CLAY, silty, dk. grey to black, with 10% plants.
				16	1, 1	30-32	24/24 0-24" CLAY, silty, dk. grey to black, with abundant
					1, 1		plant material and 1" thick peat layers throughout.
				17	2, 2	32-34	24/24 0-24" CLAY, silty, dk. grey to black, with abundant
	35				2, 2		plant material.
				18	1, 1	34-36	24/24 0-10" PEAT, plant material with CLAY, black, wet.
					1, 2		10-24" CLAY, dk. grey to black, soft, wet, w/plants.
				19	1, 1	36-38	24/24 0-24" CLAY, silty, dk. grey to black, with abundant
					1, 1		interlayered plant material.
	40			20	1, 1	38-40	24/24 0-24" CLAY, silty, dk. grey to black, with abundant
					1, 1		interlayered plant material. Trace lt. grey clay.
				21	1, 1	40-42	18/24 0-18" CLAY, silty, medium grey-blue, soft, moist,
					1, 1		with abundant plant material (>25%).
				22	1, 1	42-44	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
	45				1, 1		moist, with 5% plant material (lt. tan color).
				23	1, 1	44-46	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
					1, 1		moist, with increased plant material.
				24	1, 1	46-48	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
					1, 1		moist, with < 5% plant material.
	50			25	1, 1	48-50	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
					1, 1		moist, with trace plant material.
				26	5, 4	50-52	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
					5, 4		moist, increased 5% plant material.
				27	wt of	52-54	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
	55			hammer			moist, with 25% plant material (blk to org-yellow).
				28	2, 2	54-56	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
					1, 2		moist, with 25% plant material (blk to org-yellow).
				29	wt of	56-58	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
				hammer			moist, with 25% plant material (blk to org-yellow).
	60			30	2, 2	58-60	24/24 0-24" CLAY, lt. grey-blue, "gunmetal grey", soft,
					3, 3		moist, with 50% plant material (blk to org-yellow).

Environmental Resources Management

A-32-D

WO No: 72208.00.01 Date Completed 8 Sep 94
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 60 Diameter 12-inch/8-inch
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen PVC Length (ft) 15 Diameter 4-inch
 Slot Size 10 slot / 0.01-inch Stabilized DTW feet TOC
 Riser PVC Length (ft) 45.0 Diameter 4-inch
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G



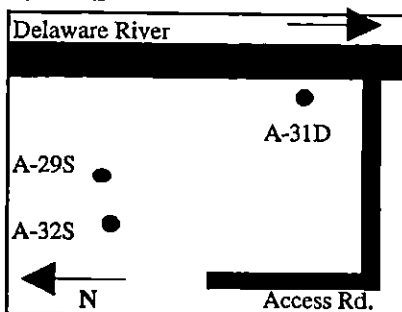
Location Sketch Map

Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
Lithologic samples were collected with standard split-spoons (2 inch x 2 feet). The driving mechanism was a 140 pound hammer dropped 30-inches. Blow counts were recorded per 0.5 foot interval.						<i>Monitoring Well Construction Specifications</i>
						Riser Interval (Feet BGS)
						(4-inch PVC) Top +3
						Bottom 45
						Screen Interval (Feet BGS)
						(4-inch PVC) Top 45
						Bottom 60
						Cement/Bentonite Grout (Feet BGS)
						Top 0
						Bottom 41
						Bentonite Seal (Feet BGS)
						Top 41
						Bottom 43
						Sand Pack #1 Morie (Feet BGS)
						Top 43
						Bottom 60
						Surface completion is an above-grade protective steel casing (6-inch round x 5 feet long) grouted into place, and a concrete surface pad poured around the casing.
						The casing is secured with a locking aluminum cover and marked with a metal identification tag. The PVC riser is capped with a PVC slip fitting.

Environmental Resources Management

WO No: 72208.00.01 Date Completed 9 Sep 94
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 35 Diameter 12-inch/8-inch
 North Surface Elev feet msl
 East Riser Elev feet msl
 Screen PVC Length (ft) 10 Diameter 4-inch
 Slot Size 10 slot / 0.01-inch Stabilized DTW feet TOC
 Riser PVC Length (ft) 25.0 Diameter 4-inch
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

A-32-S



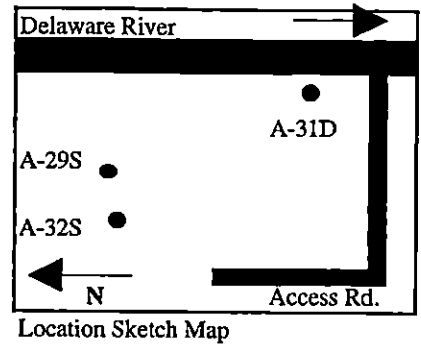
Location Sketch Map

Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
						Recovery
						per 24" Description
0			1	4, 5	0-2	7/24 0-7" SILT, sandy, medium orange-brown, dry.
				12, 15		
			2	12, 15	2-4	11/24 0-11" SILT, sandy, medium orange-brown, dry, with quartz pebbles.
				10, 10		
					4-6	12/24 0-3" SILT, sandy, orange-brown.
5			3	5 4		3-5" CLAY, silty, brown.
				3, 3		5-12" Clay, silty, black, soft, moist.
			4	2, 2	6-8	12/24 0-8" CLAY, silty, black.
				1, 1		8-12" SILT, clayey, medium to light tan, soft, wet, with gravel and rounded quartz pebbles.
10			5	1, 1	8-10	17/24 0-17" CLAY, silty, dk. grey to black, layered, micaceous.
				1, 1		
			6	1, 1	10-12	19/24 0-19" CLAY, silty, dk. grey to black, layered, very soft, moist, with trace plant material.
				1, 1		
15			7	1, 1	12-14	20/24 0-20" CLAY, silty, dk. grey to black, layered, soft, wet to moist with trace plant material.
				2, 2		
			8	wt. of hammer	14-16	24/24 0-24" CLAY, silty, dk grey to black, micaceous trace plant material.
			9	1, 2	16-18	12/24 0-12" CLAY, silty, dk grey to black, micaceous wet to moist with trace plant material.
				2, 1		
20			10	2, 1	18-20	16/24 0-14" CLAY, silty, dk. grey to black A/A.
				2, 1		14-16" PEAT, abundant plant material, trace clay.
			11	1, 1	20-22	24/24 0-24" PEAT, 100% plant material, saturated.
			12	1, 1	22-24	24/24 0-24" PEAT, 100% plant material, saturated.
25				1, 1		
			13	1, 1	24-26	24/24 0-24" PEAT, abundant plant material, with about 40% CLAY, silty, black, interlayered, wet.
				1, 1		
			14	1, 1	26-28	24/24 0-24" PEAT, abundant plant material, with

Environmental Resources Management

WO No: 72208.00.01 Date Completed 9 Sep 94
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 35 Diameter 12-inch/8-inch
 North Surface Elev _____ feet msl
 East Riser Elev _____ feet msl
 Screen PVC Length (ft) 10 Diameter 4-inch
 Slot Size 10 slot / 0.01-inch Stabilized DTW _____ feet TOC
 Riser PVC Length (ft) 25.0 Diameter 4-inch
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

A-32-S

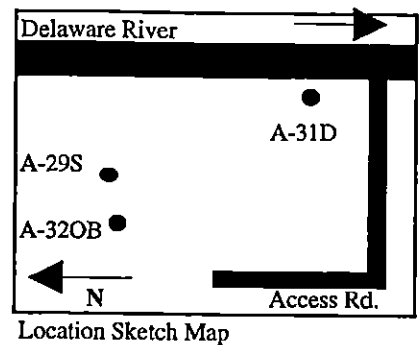



	Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
					1, 1		CLAY, silty, black, interlayered, wet.
	30			15	1, 1	28-30	24/24 0-10" PEAT, 100% plant material, wet.
					1, 1		10-24" CLAY, silty, dk. grey to black, with 10% plants.
				16	1, 1	30-32	24/24 0-24" CLAY, silty, dk. grey to black, with abundant
					1, 1		plant material and 1" thick peat layers throughout.
				17	2, 2	32-34	24/24 0-24" CLAY, silty, dk. grey to black, with abundant
	35				2, 2		plant material.
				18	1, 1	34-35	12/12 0-10" PEAT, plant material with CLAY, black, wet.
					1, 2		10-24" CLAY, dk. grey to black, soft, wet, w/plants.
							<i>Monitoring Well Construction Specifications</i>
Lithologic samples were collected with standard							Riser Interval (Feet BGS)
split-spoons (2 inch x 2 feet). The driving mechanism							(4-inch PVC) Top +3
was a 140 pound hammer dropped 30-inches.							Bottom 25
Blow counts were recorded per 0.5 foot interval.							Screen Interval (Feet BGS)
							(4-inch PVC) Top 25
							Bottom 35
The 8.25-inch I.D. borehole was advanced to 35 ft bgs,							Cement/Bentonite Grout (Feet BGS)
with continuous split spoons.							Top 0
4-inch diameter PVC screen and casing was then							Bottom 21
installed inside the augers. Then a sand pack was							Bentonite Seal (Feet BGS)
installed, followed by a bentonite plug. The remaining							Top 21
annular space was tremmie grouted with a cement-							Bottom 23
bentonite mix to ground surface. A 6-inch diameter							Sand Pack #1 Morie (Feet BGS)
steel protective casing was then installed.							Top 23
							Bottom 35
							Surface completion is an above-grade protective steel
							casing (6-inch round x 5 feet long) grouted into place,
							and a concrete surface pad poured around the casing.
							The casing is secured with a locking
							aluminum cover and marked with a metal identification
							tag. The PVC riser is capped with a PVC slip fitting.

Environmental Resources Management

WO No:	72208.00.01	Date Completed	8 Sep 94		
Project	R.F.I.	Owner	Occidental Chemical Corporation		
Location	Del. City, Del.	Bore Depth (ft)	15	Diameter	8.25-inch
North		Surface Elev		feet msl	
East		Riser Elev		feet msl	
Screen	PVC	Length (ft)	15	Diameter	4-inch
Slot Size	10 slot / 0.01-inch	Stabilized DTW		feet TOC	
Riser	PVC	Length (ft)	45.0	Diameter	4-inch
Drilling Method	HS Auger	Driller	Dennis Moore	Geologist	Bill Gordon
Drilling Co.	ADT-MA Trenton, New Jersey			Pa. Geo. No.	PG-001466-G

A-32-OB

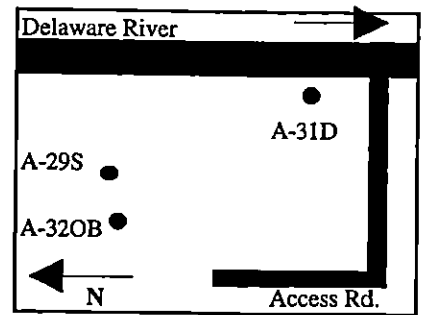


	Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
							Recovery
							per 24" Description
	0			1	4, 5 12, 15	0-2	7/24 0-7" SILT, sandy, medium orange-brown, dry.
				2	12, 15 10, 10	2-4	11/24 0-11" SILT, sandy, medium orange-brown, dry, with quartz pebbles.
						4-6	12/24 0-3" SILT, sandy, orange-brown.
	5			3	5 4 3, 3		3-5" CLAY, silty, brown. 5-12" Clay, silty, black, soft, moist.
				4	2, 2 1, 1	6-8	12/24 0-8" CLAY, silty, black. 8-12" SILT, clayey, medium to light tan, soft, wet, with gravel and rounded quartz pebbles.
	10			5	1, 1 1, 1	8-10	17/24 0-17" CLAY, silty, dk. grey to black, layered, micaceous.
				6	1, 1 1, 1	10-12	19/24 0-19" CLAY, silty, dk. grey to black, layered, very soft, moist, with trace plant material.
				7	1, 1	12-14	20/24 0-20" CLAY, silty, dk. grey to black layered, soft, wet to moist with trace plant material.
	15			2, 2			
				8	wt. of hammer	14-15	12/12 0-12" CLAY, silty, dk grey to black, micaceous trace plant material.
	20						
							<i>Monitoring Well Construction Specifications</i>
Lithologic samples were collected with standard split-spoons (2 inch x 2 feet). The driving mechanism was a 140 pound hammer dropped 30-inches. Blow counts were recorded per 0.5 foot interval.							Riser Interval (Feet BGS)
							(4-inch PVC) Top +3 Bottom 5
The 8.25-inch I.D.augers were advanced to a depth of 15 ft. bgs.							Screen Interval (Feet BGS)
							(4-inch PVC) Top 5 Bottom 15
							Cement/Bentonite Grout (Feet BGS)
							Top 0

Environmental Resources Management

WO No: 72208.00.01 Date Completed 8 Sep 94
 Project R.F.I. Owner Occidental Chemical Corporation
 Location Del. City, Del. Bore Depth (ft) 15 Diameter 8.25-inch
 North Surface Elev _____ feet msl
 East Riser Elev _____ feet msl
 Screen PVC Length (ft) 15 Diameter 4-inch
 Slot Size 10 slot / 0.01-inch Stabilized DTW _____ feet TOC
 Riser PVC Length (ft) 45.0 Diameter 4-inch
 Drilling Method HS Auger Driller Dennis Moore Geologist Bill Gordon
 Drilling Co. ADT-MA Trenton, New Jersey Pa. Geo. No. PG-001466-G

A-32-OB



Location Sketch Map

	Depth (feet BGS)	PID Reading (ppm)	Well Construction Schematic	Split-Spoon #	Blows per 0.5 feet	Sample (feet BGS)	Sample Description/Classification
4-inch diameter PVC screen and casing was then							Bottom 3
installed inside the augers. Then a sand pack was							Bentonite Seal (Feet BGS)
installed, followed by a bentonite plug. The remaining							Top 3
annular space was tremmie grouted with a cement-							Bottom 5
bentonite mix to ground surface. A 6-inch diameter							Sand Pack #1 Morie (Feet BGS)
steel protective casing was then installed.							Top 5
							Bottom 15
							Surface completion is an above-grade protective steel
							casing (6-inch round x 5 feet long) grouted into place,
							and a concrete surface pad poured around the casing.
							The casing is secured with a locking
							aluminum cover and marked with a metal identification
							tag. The PVC riser is capped with a PVC slip fitting.

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
Project No.: 7462
Client: Occidental Chemical Corporation
Location: Delaware City, Delaware

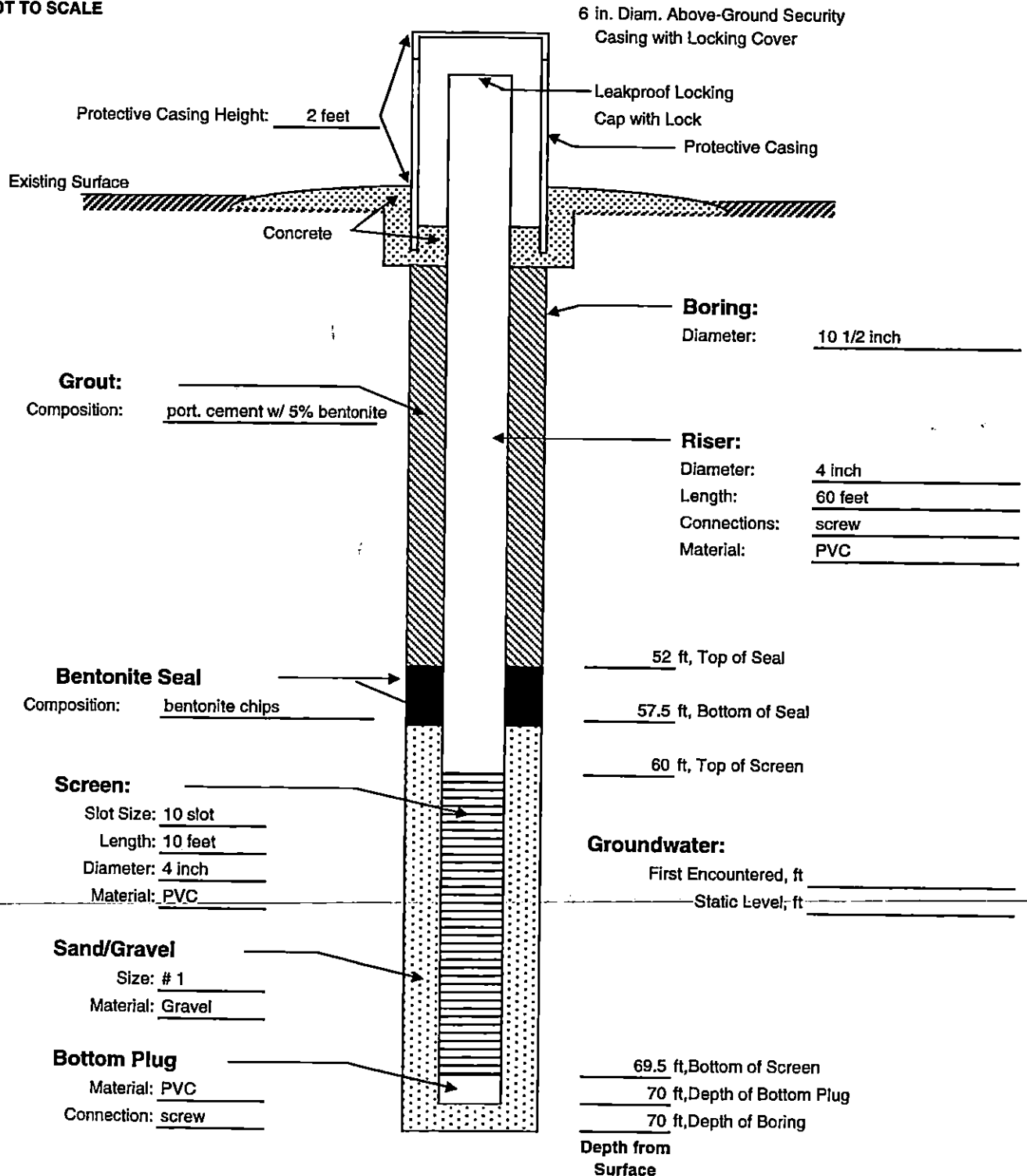
Hole Designation: A-33D
Date Completed: 9/22/98
Drilling Method: 6 5/8-inch HS Augers
CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 26.72
ground: 24.42

Northing: 583146.8828
Easting: 441374.7781

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
Project No.: 7462
Client: Occidental Chemical Corporation
Location: Delaware City, Delaware

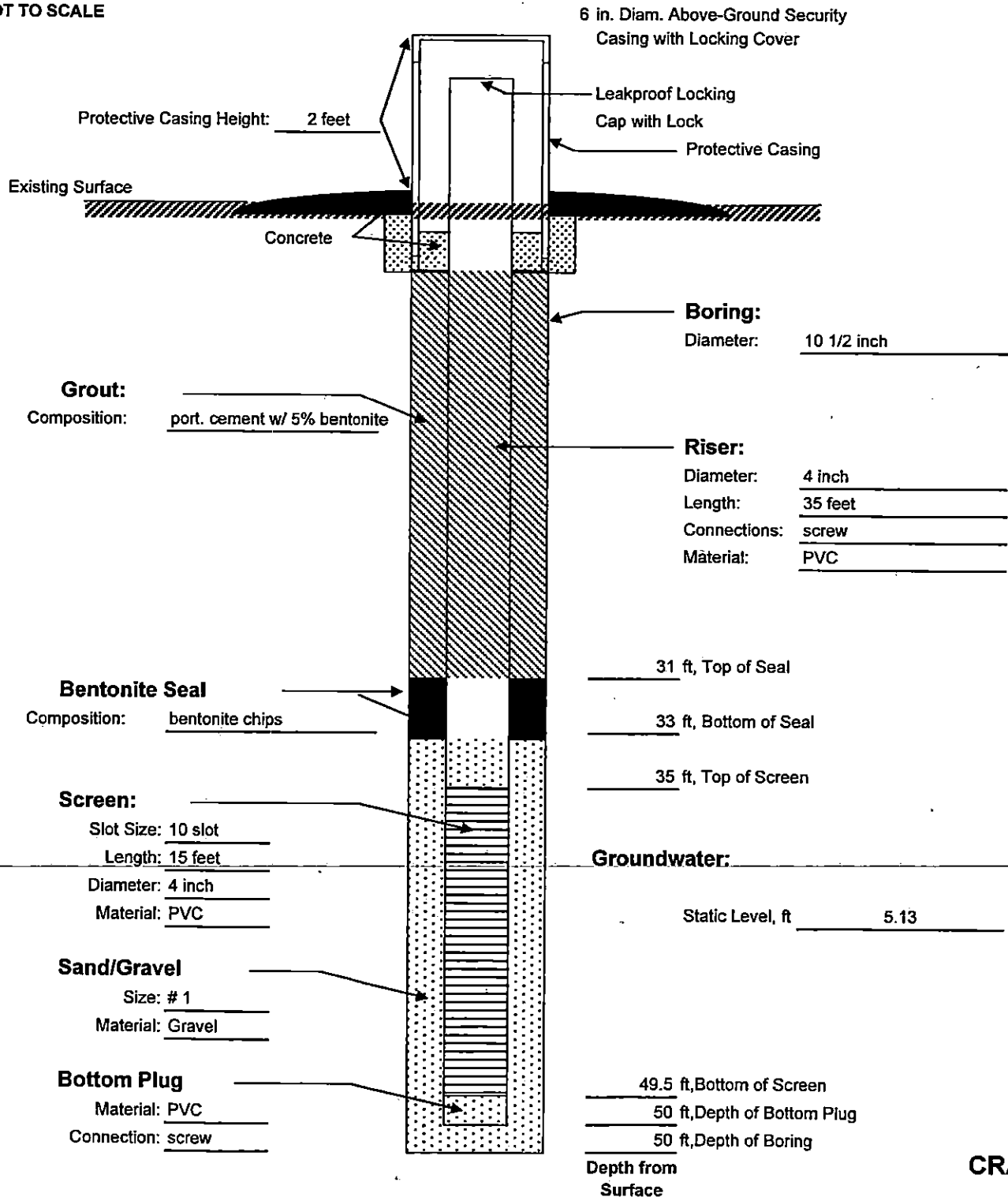
Hole Designation: A-33S
Date Completed: 9/22/98
Drilling Method: 6 5/8-inch HS Augers
CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 25.95'
ground: 24.43'
steel casing elevation: 26.67'

Northing: 583146.7755
Easting: 441369.8433

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
Project No.: 7462
Client: Occidental Chemical Corporation
Location: Delaware City, Delaware

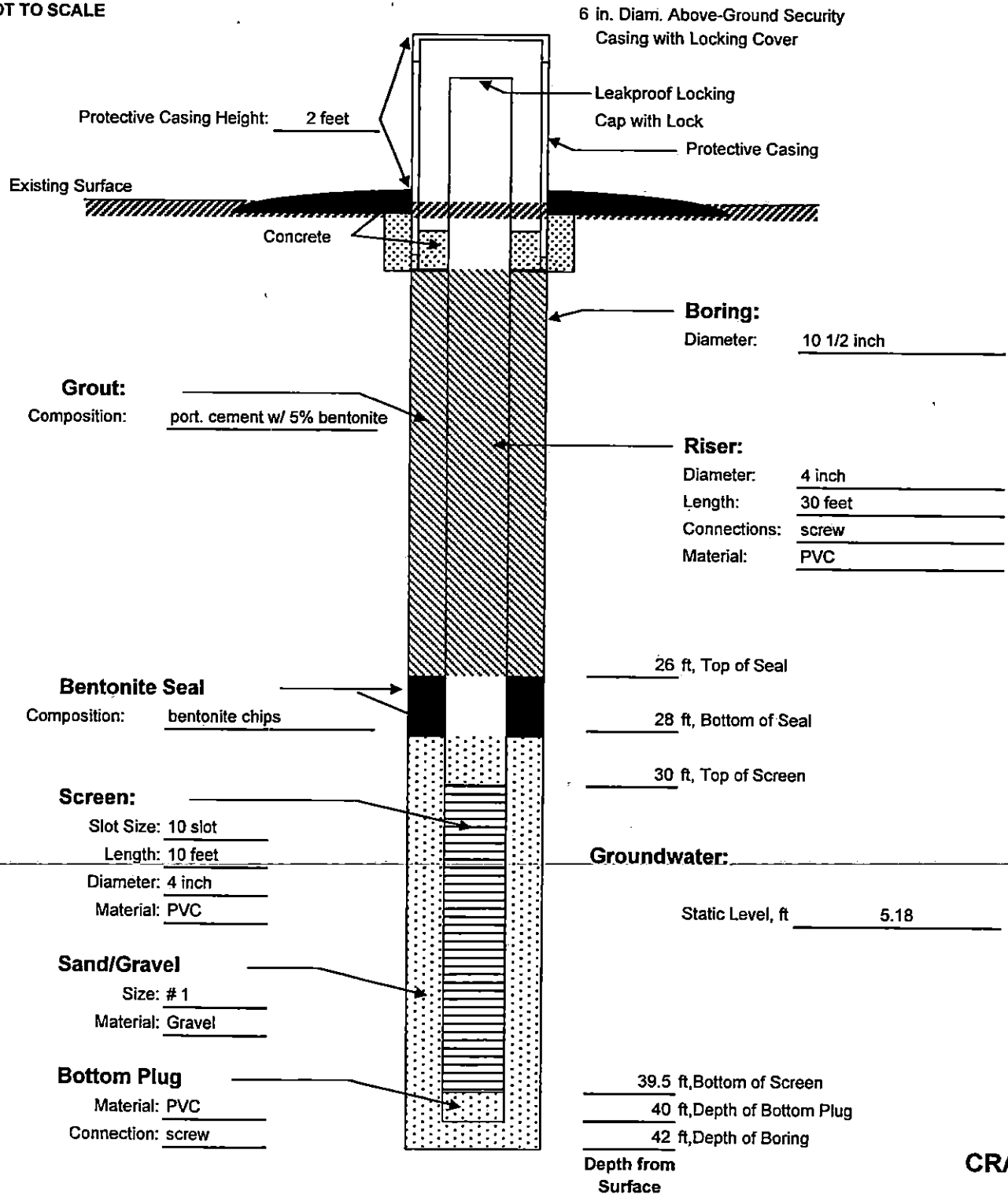
Hole Designation: A-34D
Date Completed: 9/24/98
Drilling Method: 6 5/8-inch HS Augers
CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 28.52'
ground: 27.08'
steel casing elevation: 29.12'

Northing: 583111.6878
Easting: 440677.1628

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

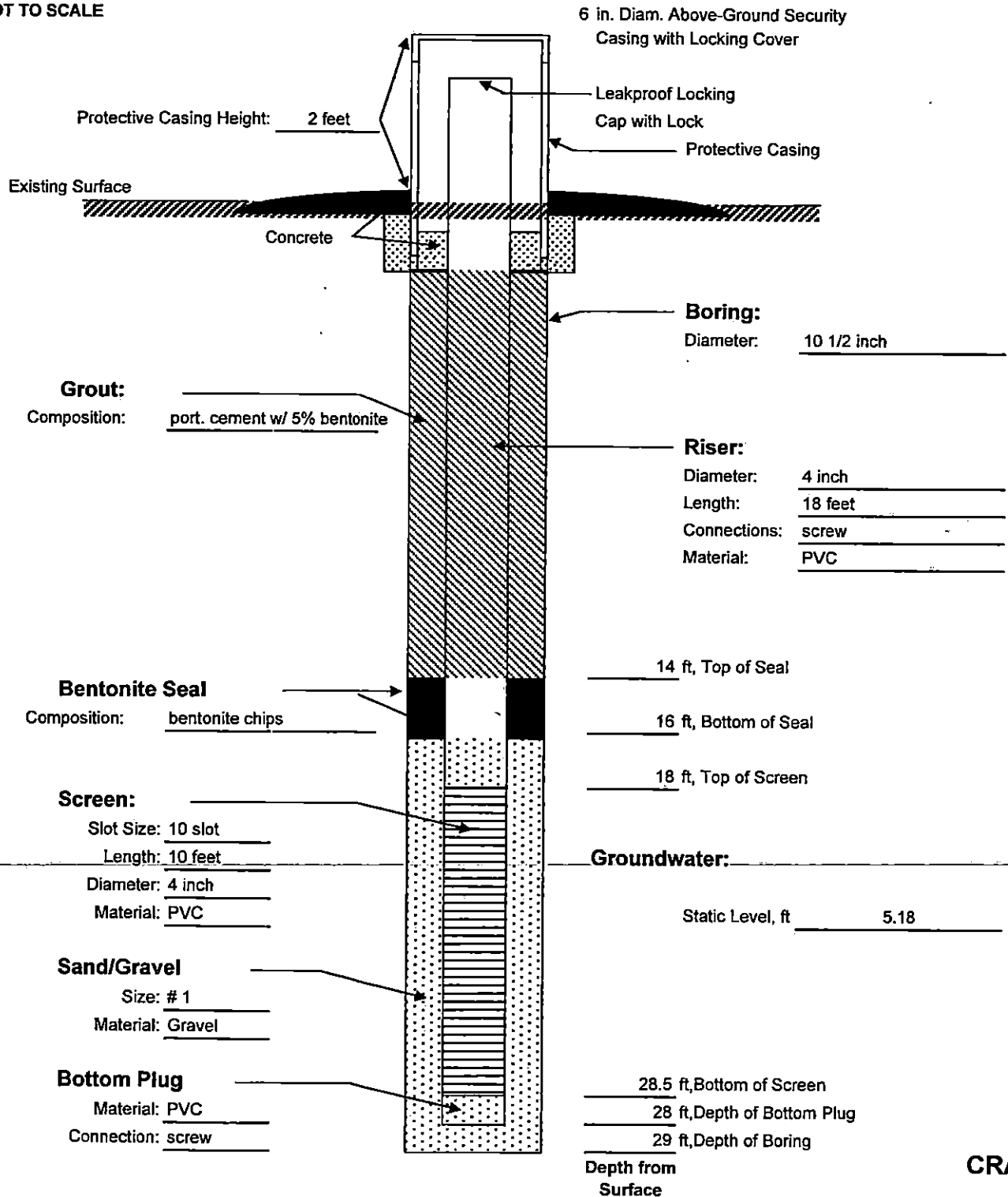
Hole Designation: A-34S
 Date Completed: 9/24/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 28.74'
 ground: 27.03'
 steel casing elevation: 28.95'

Northing: 583111.7469
 Easting: 440671.8176

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

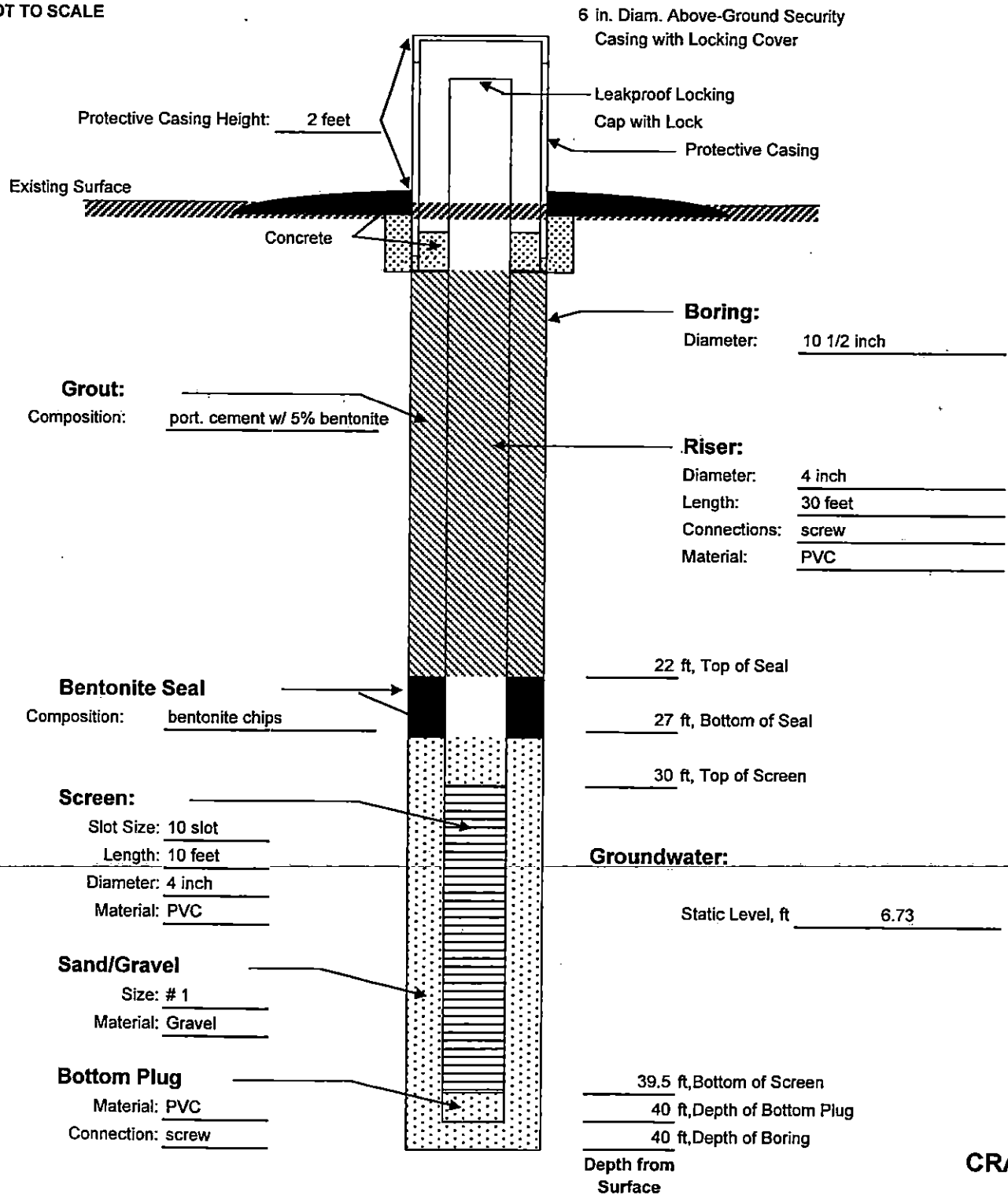
Hole Designation: A-35D
 Date Completed: 10/2/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 16.05'
 ground: 13.52'
 steel casing elevation: 16.32'

Northing: 583229.1585
 Easting: 440360.0068

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

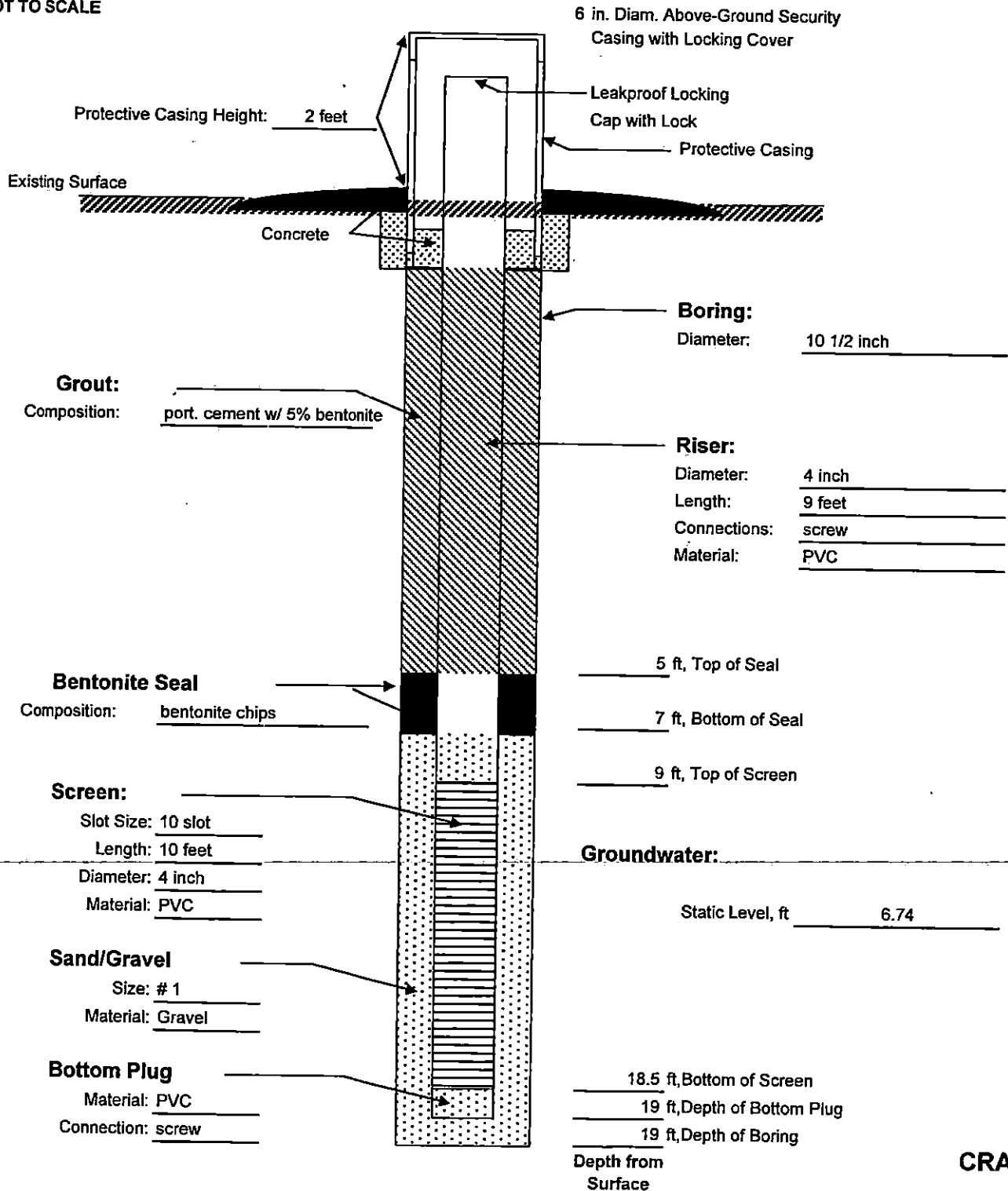
Hole Designation: A-35S
 Date Completed: 10/2/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 16.21'
 ground: 13.82'
 steel casing elevation: 16.49'

Northing: 583229.4013
 Easting: 440368.1848

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

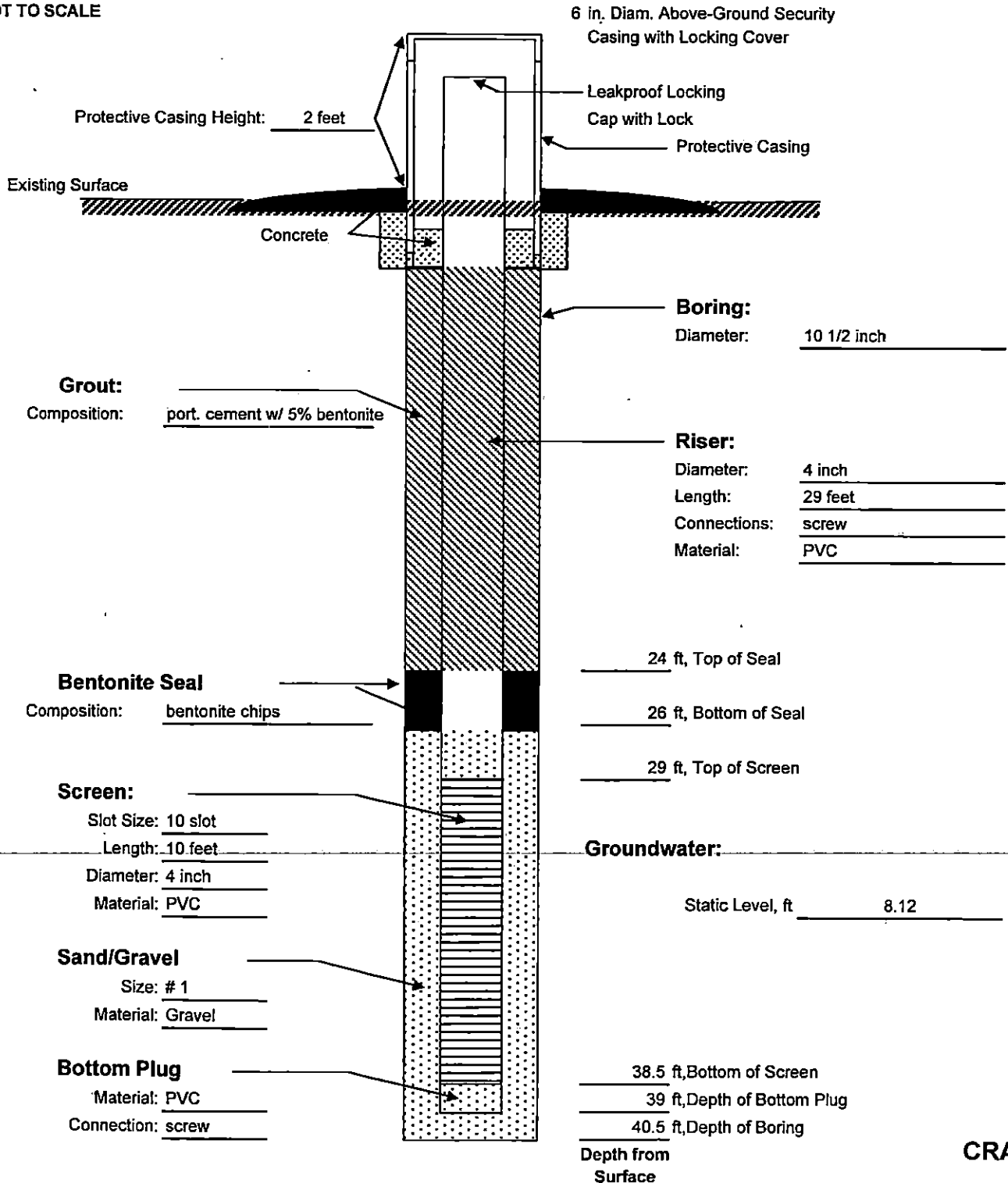
Hole Designation: A-36D
 Date Completed: 10/14/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 29.78'
 ground: 27.02'
 steel casing elevation: 29.98'

Northing: 582593.8690
 Easting: 440449.5542

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

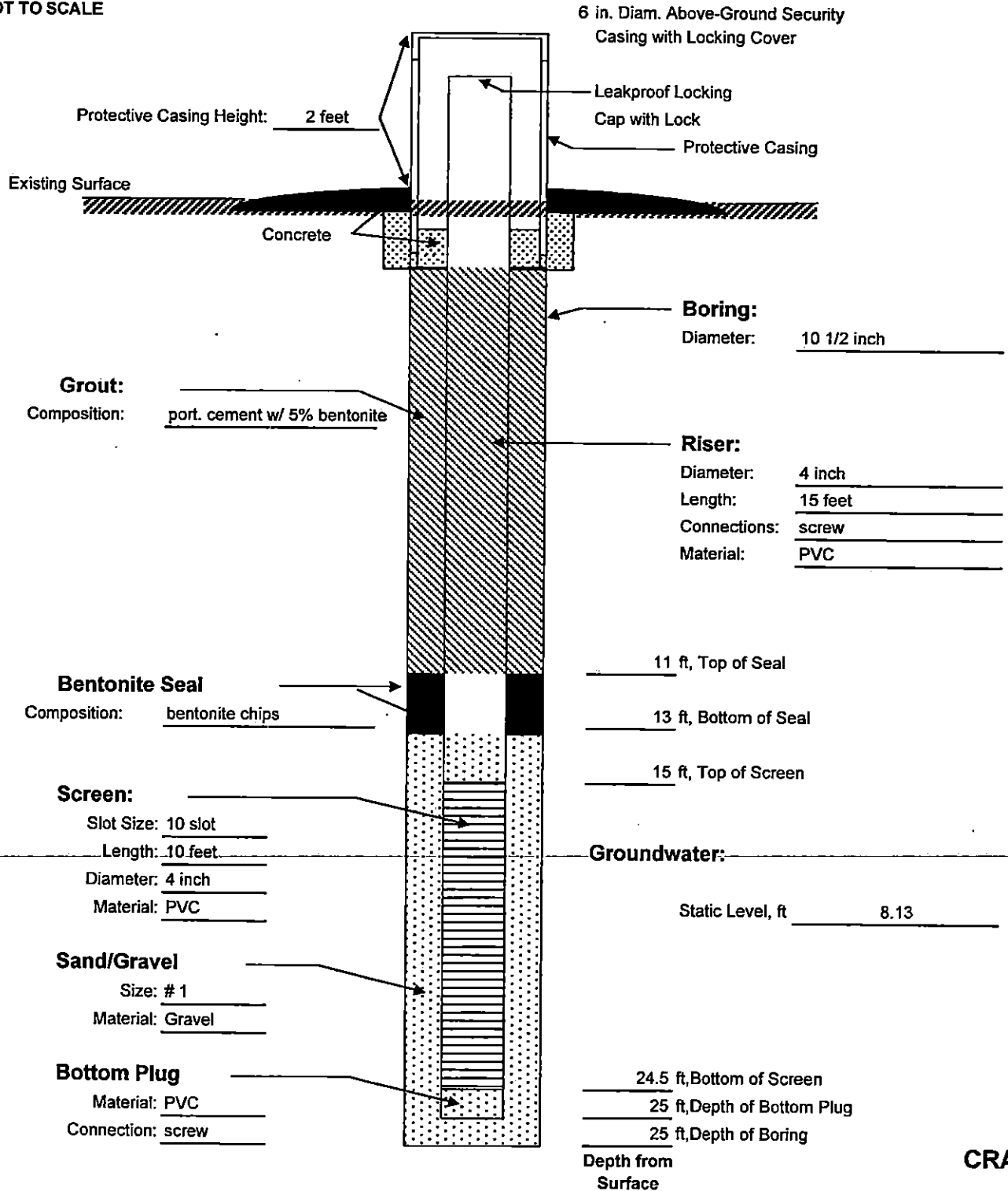
Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

Hole Designation: A-36S
 Date Completed: 10/13/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:
 top of inner casing: 29.85'
 ground: 26.95'
 steel casing elevation: 29.99'

Northing: 582595.5173
 Easting: 440449.2951

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

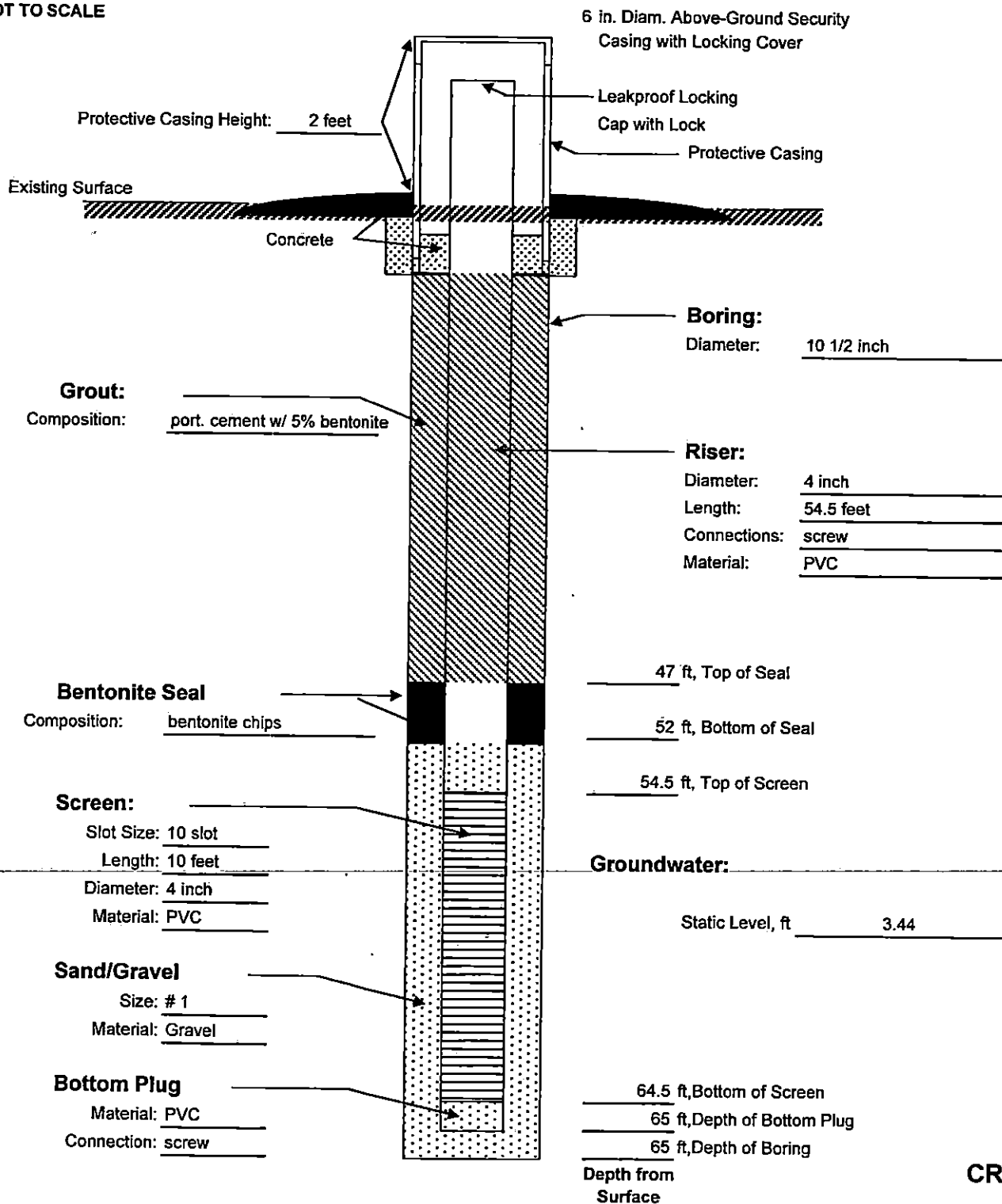
Hole Designation: A-37D
 Date Completed: 10/12/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 6.52'
 ground: 4.70'
 steel casing elevation: 6.66'

Northing: 583629.1913
 Easting: 442138.5133

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

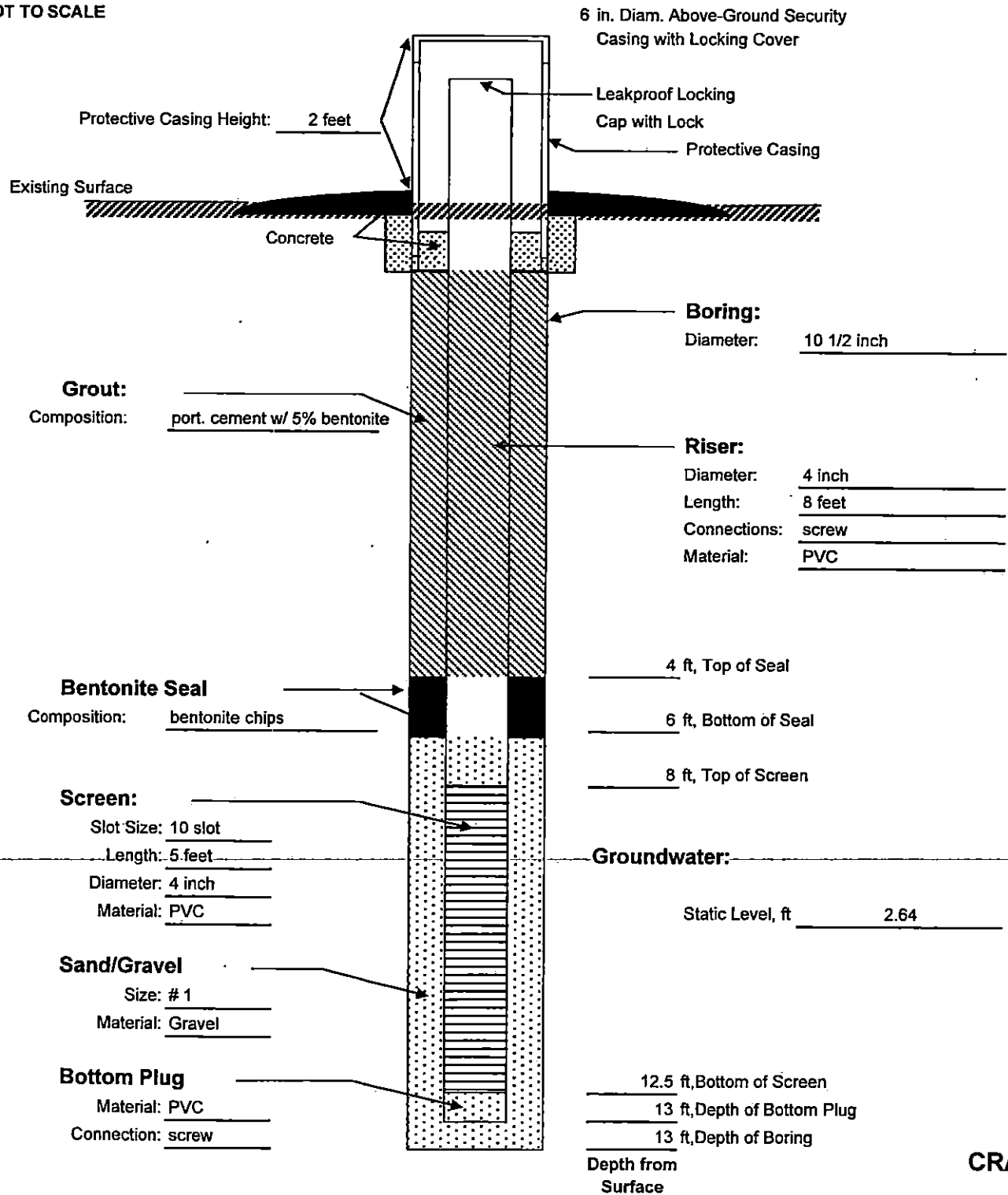
Hole Designation: A-37S
 Date Completed: 10/12/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 6.20'
 ground: 4.63'
 steel Casing Elevation: 6.40'

Northing: 583632.4184
 Easting: 442141.4332

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
Project No.: 7462
Client: Occidental Chemical Corporation
Location: Delaware City, Delaware

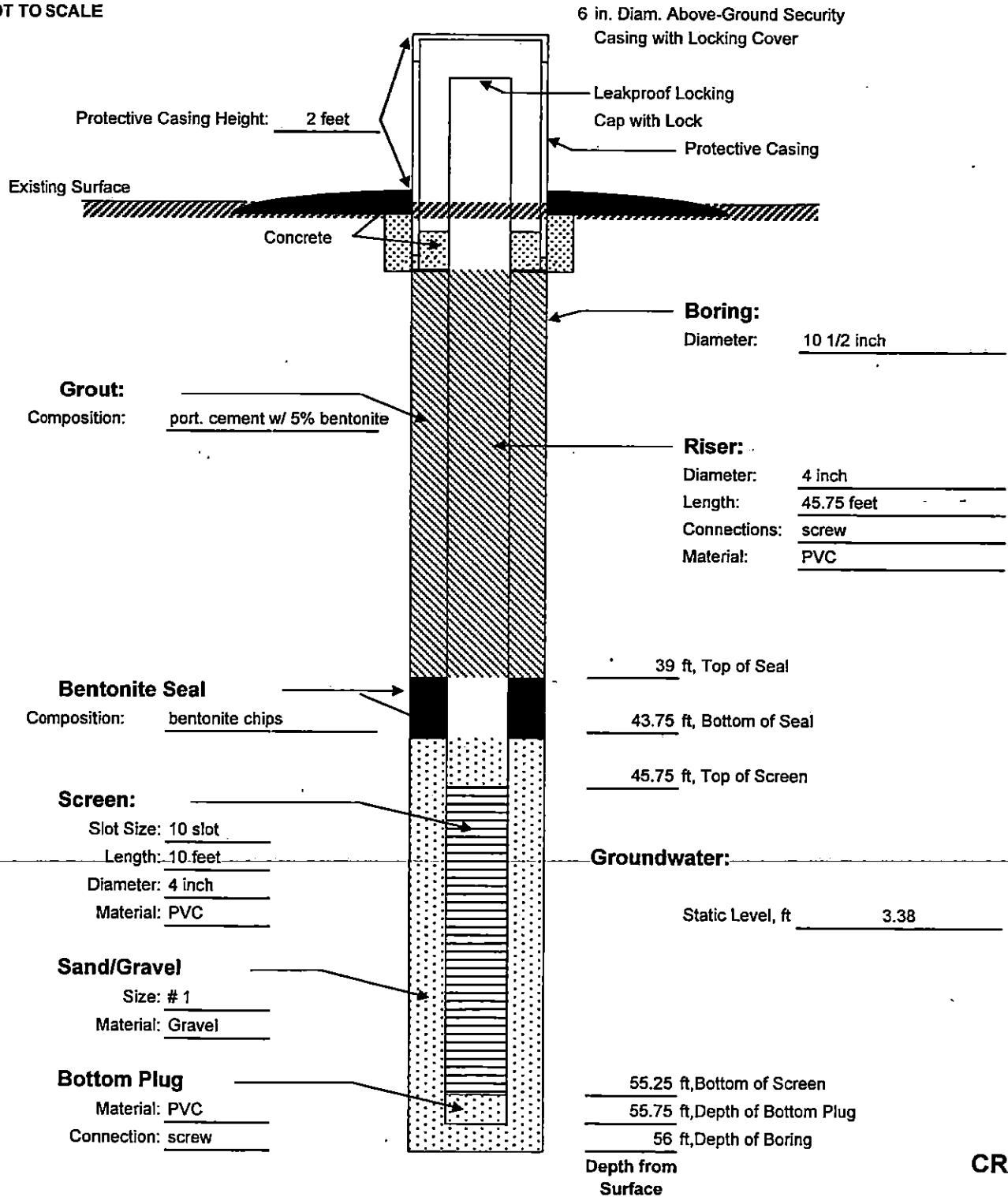
Hole Designation: A-38D
Date Completed: 10/7/98
Drilling Method: 6 5/8-inch HS Augers
CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 6.86'
ground: 5.54'
steel casing elevation: 7.06'

Northing: 583562.9564
Easting: 442060.5302

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

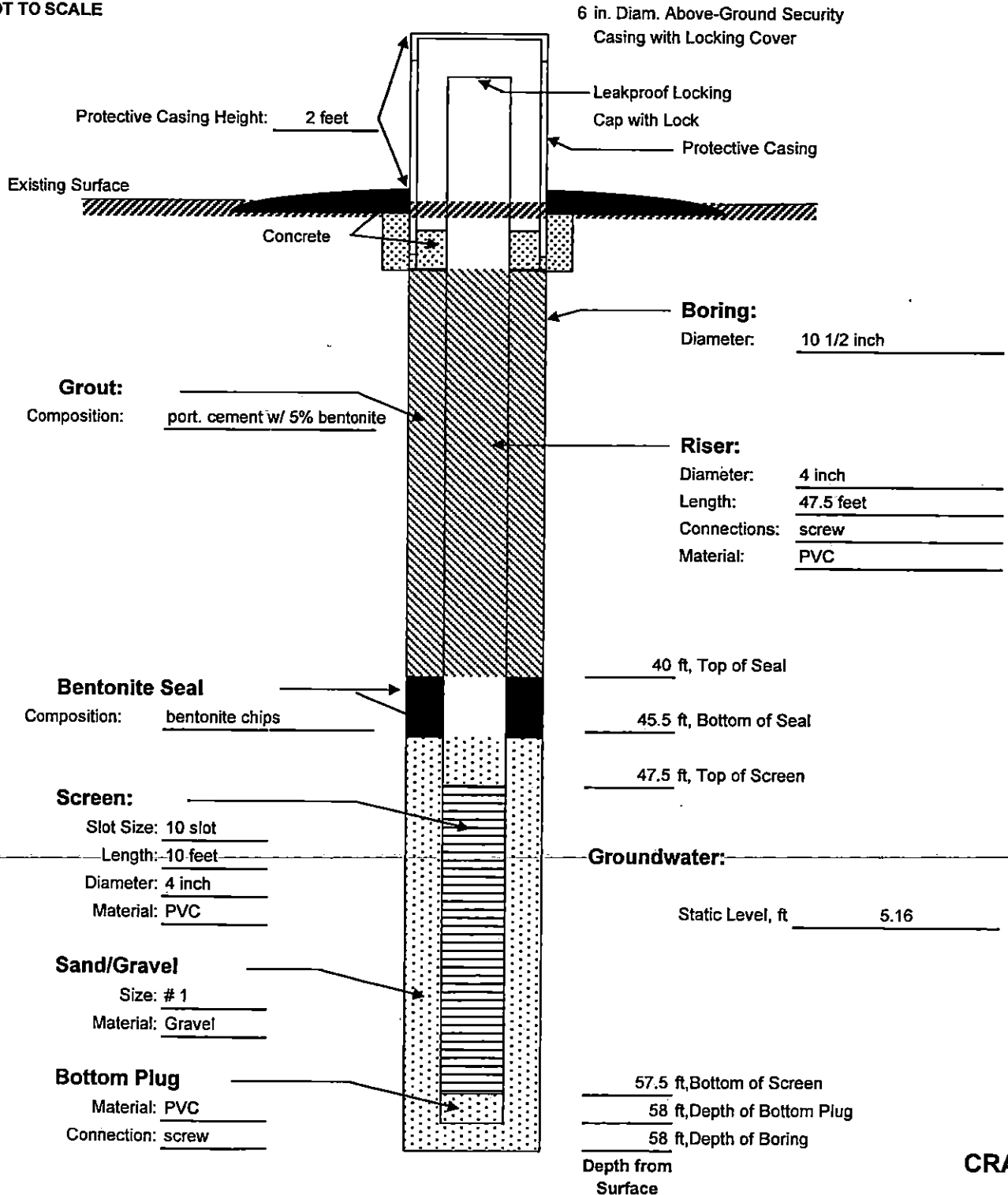
Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware
 Survey Information:

top of inner casing: 22.36'
 ground: 20.19'
 steel casing elevation: 22.66'

Hole Designation: A-39D
 Date Completed: 9/29/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Northing: 583202.3834
 Easting: 441930.5249

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

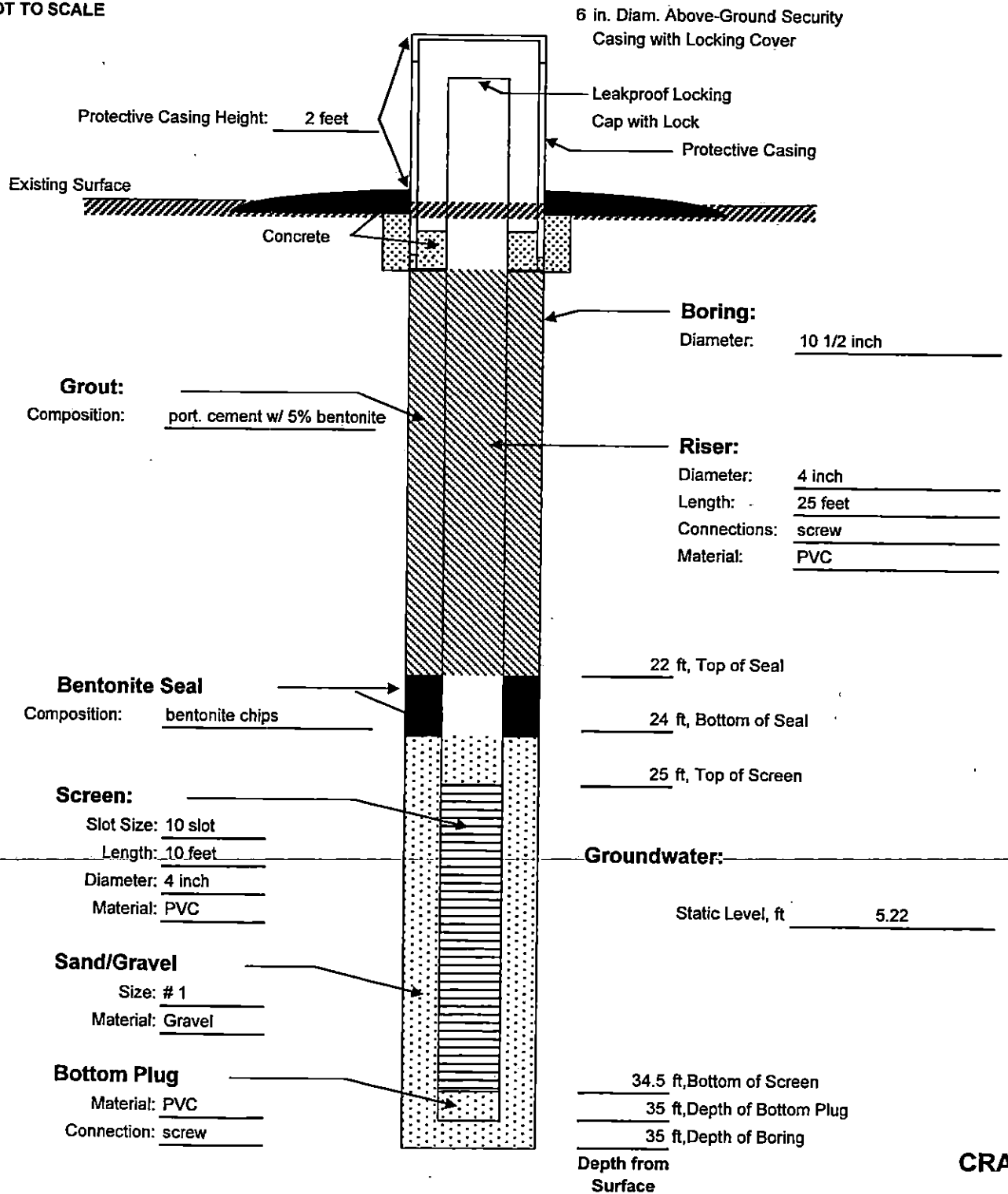
Hole Designation: A-39S
 Date Completed: 9/29/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 22.43'
 ground: 20.54'
 steel casing elevation: 22.78'

Northing: 583199.5604
 Easting: 441925.9380

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

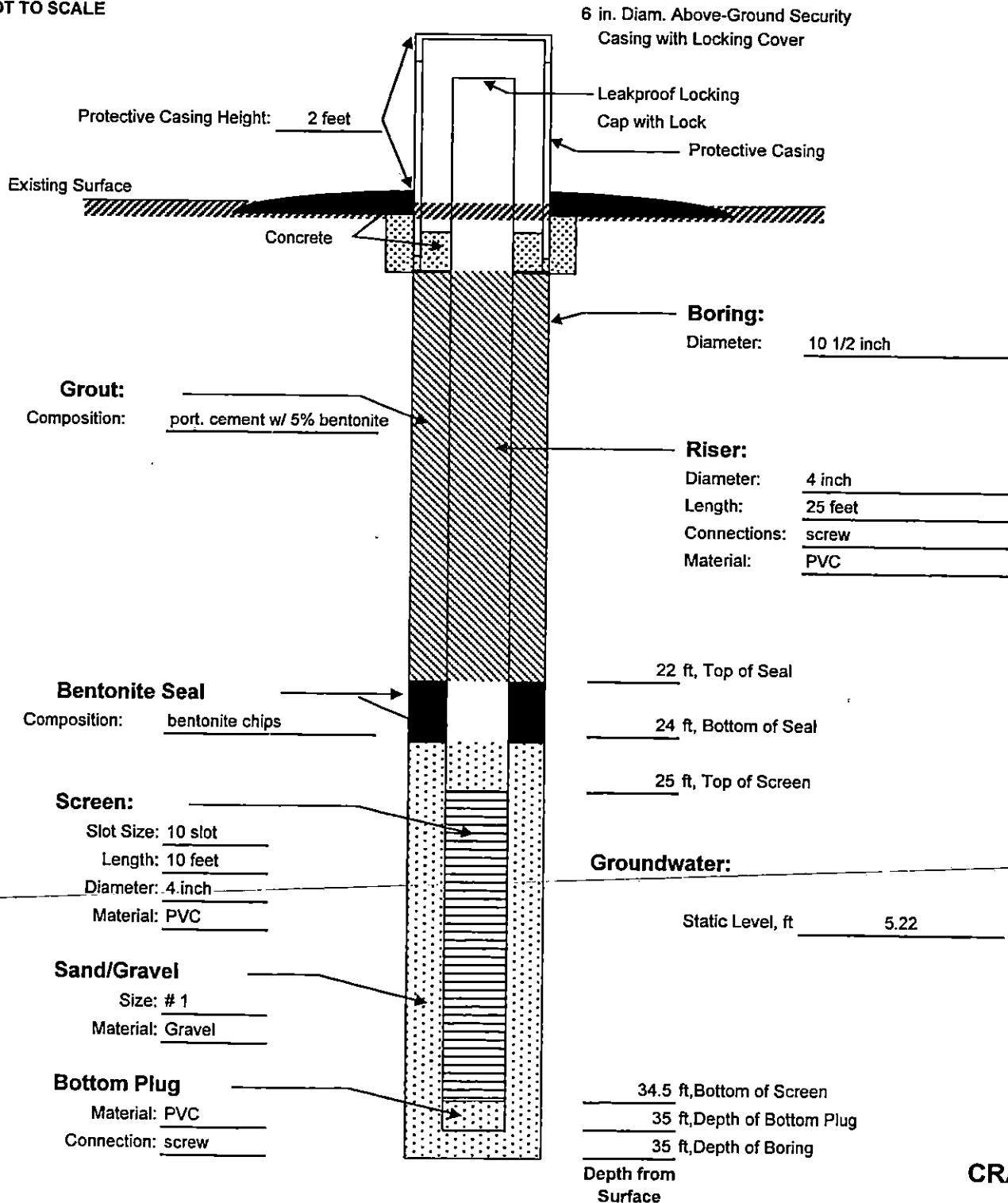
Hole Designation: A-39S
 Date Completed: 9/29/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 22.43'
 ground: 20.54'
 steel casing elevation: 22.78'

Northing: 583199.5604
 Easting: 441925.9380

NOT TO SCALE



CRA

WELL CONSTRUCTION LOG

Project Name: Phase II RFI
 Project No.: 7462
 Client: Occidental Chemical Corporation
 Location: Delaware City, Delaware

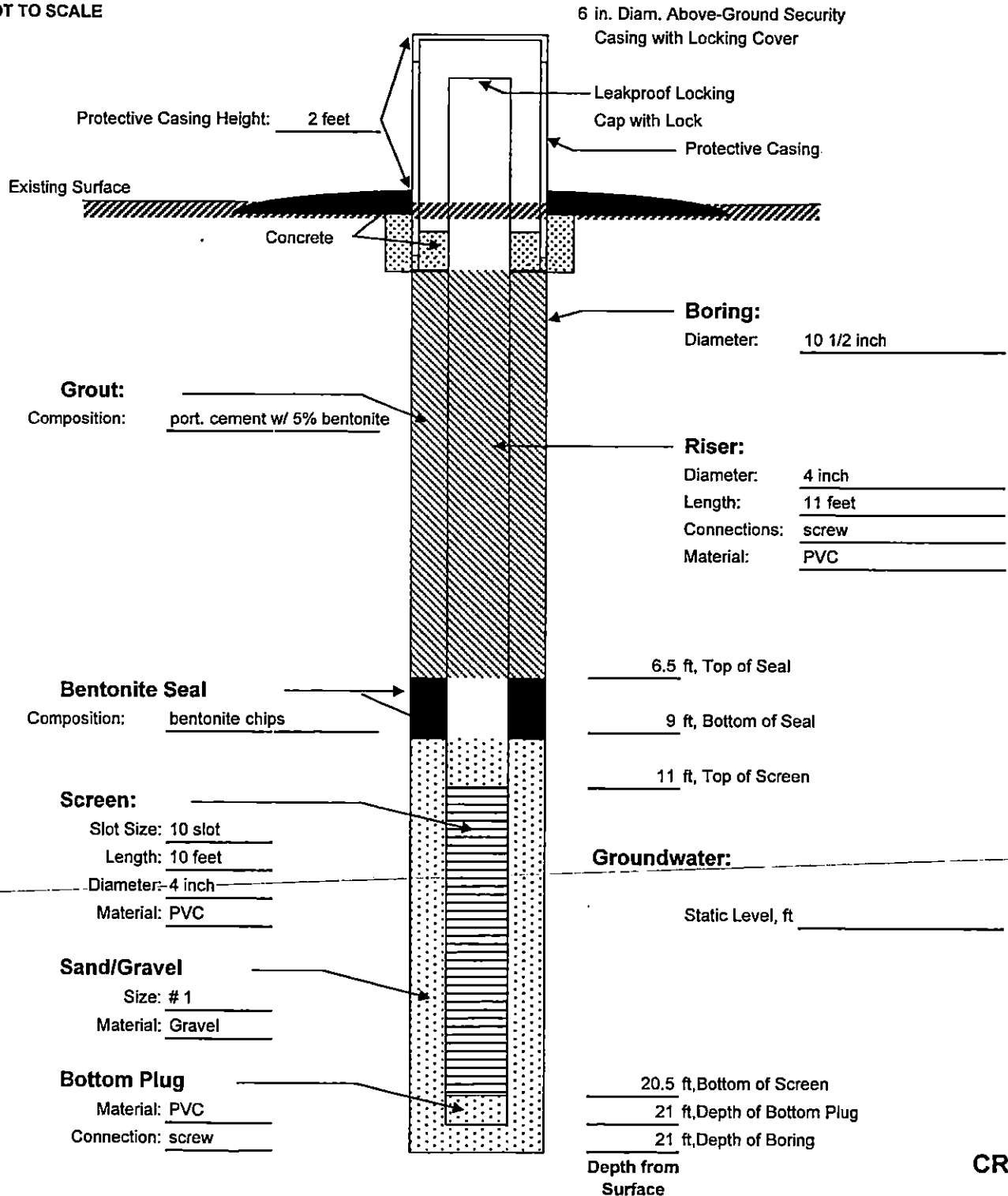
Hole Designation: A-39OB
 Date Completed: 10/1/98
 Drilling Method: 6 5/8-inch HS Augers
 CRA Supervisor: B. Foulke

Survey Information:

top of inner casing: 22.57'
 ground: 20.52'
 steel casing elevation: 22.76'

Northing: 583197.8202
 Easting: 441921.9834

NOT TO SCALE



CRA

MARSH CORE LOGS

[illegible]

TEST PIT STRATIGRAPHY LOG

Page 1 of 1

[illegible]

Completed by: _____

Date: _____

CRA

	<u>TEST PIT STRATIGRAPHY LOG</u>
--	----------------------------------

Project Name:	Phase II RFI	
----------------------	---------------------	--

Contractor: Normandeau Assoc.

Test Pi Destination - C-23

Project Number:	7462
------------------------	-------------

Date Started: 1/25/99

Client:	OxyChem	
----------------	----------------	--

Surface Elevation:

Date Completed: 1/25/99

Location:	Delaware City, DE
-----------	-------------------

Test Pit Method: Vibracone

CRA Supervisor: R. Ford/ A. Williams

Soil Symbol, Primary Component, Secondary Components, Relative Density/Consistency, Grain Size/Plasticity, Gradation/Structure, Colour, Moisture Content, Supplementary Descriptors

**Sample
#**

**Sample
Interval**

PID

2044107.

Geologic Profile

1

18

Gray clay (2 to 5%)	Orange material
---------------------	-----------------

	1
--	---

2500	
------	--

recovery = 9.0 ft.

1

52

Peat	
------	--

1
2

2500

1

end

Tan, brown silt and fine sand	

Completed by: _____	
---------------------	--

Date: _____

CRA	
-----	--

	<u>TEST PIT STRATIGRAPHY LOG</u>
--	----------------------------------

Project Name:	Phase II RFI
----------------------	---------------------

Contractor: Normandeau Assoc.

Test Pi Destination - C-24

Project Number:	7462
-----------------	------

Date Started: 1/26/99

Client:	OxyChem
----------------	----------------

Surface Elevation:

Date Completed: 1/26/99

Location: Delaware City, DE

Test Pit Method: Vibracone

CRA Supervisor: B. Foulke/A. Williams/J. Garges

[illegible]

Completed by: _____

Date: _____

CRA

TEST PIT STRATIGRAPHY LOG

Project Name: Phase II RFI

Contractor: Normandeau Assoc.

Test Pi Destination - C-25

Project Number:	7462
-----------------	------

Date Started: 1/25/99

Client:	OxyChem	
---------	---------	--

Surface Elevation:

Date Completed: 1/25/99

Location:	Delaware City, DE
-----------	-------------------

Test Pit Method: Vibracone

CRA Supervisor: B. Foulke/A. Williams/J. Garges

[illegible]

Completed by: _____

Date: _____

CRA

APPENDIX I

PHASE II RFI DATA VALIDATION REPORTS



CRA Services

2055 Niagara Falls Blvd., Suite Three
Niagara Falls, NY 14304

(716) 297-2160 Office (716) 297-2265 Fax

DATE:

May 13, 1999

PROJECT NUMBER:

7462

PROJECT NAME:

Delaware City, Delaware

TRANSMITTAL TO:

Mr. John Garges

Conestoga-Rovers & Associates

559 West Uwchlan Avenue, #120

Exton, PA 19341

Please find:

☐ Draft

☒ Final

☐ Originals

☐ Other

☐ Prints

Sent via:

☐ Mail

☐ Same Day Courier

☒ Overnight Courier

☐ Other

QUANTITY	DESCRIPTION
1	Analytical Data Assessment and Validation, Phase II - RCRA Facility Investigation, Occidental Chemical Corporation, Delaware City, Delaware, August 1998 - April 1999

☐ As Requested

☐ For Review and Comment

☒ For Your Use

☐ For Review

COMMENTS:

Copy to: Alan Weston

Completed by: Denise R. Tuhovak

(Please Print)

Signed:

Denise R. Tuhovak

Filing: Correspondence File

ANALYTICAL DATA ASSESSMENT AND VALIDATION
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION.....	1
2.0 SAMPLE HOLDING TIMES.....	2
3.0 GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) TUNING AND MASS CALIBRATION - VOCS AND SVOCS.....	3
4.0 INSTRUMENT CALIBRATION.....	4
4.1 GC/MS CALIBRATION - VOCS AND SVOCS	4
4.1.1 INITIAL CALIBRATION.....	4
4.1.2 CONTINUING CALIBRATION.....	4
4.2 GC CALIBRATION - HEXACHLOROBENZENE (WATER SAMPLES ONLY)	5
4.2.1 INITIAL CALIBRATION.....	5
4.2.2 CONTINUING CALIBRATION.....	6
4.3 INORGANICS CALIBRATION	6
4.3.1 INITIAL CALIBRATION.....	6
4.3.2 CONTINUING CALIBRATION.....	7
4.3.3 CONTRACT REQUIRED DETECTION LIMIT (CRDL) STANDARD ANALYSES.....	8
5.0 SURROGATE SPIKE RECOVERIES - ORGANICS	9
6.0 INTERNAL STANDARD RECOVERIES - VOCS AND SVOCS	10
7.0 METHOD BLANK ANALYSES	11
8.0 BLANK SPIKE ANALYSES - ORGANICS	12
9.0 LABORATORY CONTROL SAMPLE ANALYSES - INORGANICS	13
10.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE.....	14
(MS/MSD) ANALYSES - ORGANICS.....	14
11.0 MATRIX SPIKE ANALYSES - INORGANICS.....	15
12.0 DUPLICATE SAMPLE ANALYSES - INORGANICS.....	16
13.0 ICP SERIAL DILUTION	17
14.0 ICP INTERFERENCE CHECK SAMPLE ANALYSIS (ICS)	18

TABLE OF CONTENTS

	<u>Page</u>
15.0 MISCELLANEOUS	19
15.1 DUAL COLUMN CONFIRMATION OF HEXACHLOROBENZENE	19
15.2 REPORTING OF SOIL RESULTS	19
15.3 TOTAL AND DISSOLVED METALS	19
16.0 FIELD QA/QC.....	20
16.1 FIELD DUPLICATES.....	20
16.2 RINSE BLANKS	20
16.3 TRIP BLANKS - VOCS (WATER SAMPLES ONLY).....	20
17.0 TICS - VOCS AND SVOCS	21
18.0 CONCLUSION	22

LIST OF TABLES

TABLE 1A	SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
TABLE 1B	SAMPLE COLLECTION AND ANALYSIS SUMMARY - SOIL/SEDIMENT SAMPLES
TABLE 1C	SAMPLE COLLECTION AND ANALYSIS SUMMARY - PIEZOMETER SAMPLES
TABLE 2	ANALYTICAL METHOD SUMMARY
TABLE 3A	ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
TABLE 3B	ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
TABLE 3C	ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
TABLE 4	QUALIFIED SAMPLE RESULTS DUE TO HOLDING TIME EXCEEDANCES
TABLE 5	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INITIAL CALIBRATION RESULTS
TABLE 6	QUALIFIED SAMPLE RESULTS DUE TO CONTINUING CALIBRATION RESULTS
TABLE 7	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING CRDL RECOVERIES
TABLE 8	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING SURROGATE RECOVERIES
TABLE 9	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING INTERNAL STANDARD (IS) RECOVERIES
TABLE 10	QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE METHOD BLANKS
TABLE 11	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING BLANK SPIKE RESULTS
TABLE 12	QUALIFIED RESULTS DUE TO MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERIES
TABLE 13	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE RECOVERIES

LIST OF TABLES
(CONT'D.)

TABLE 14	QUALIFIED SAMPLE RESULTS DUE TO POOR LABORATORY DUPLICATE PRECISION
TABLE 15	QUALIFIED SAMPLE RESULTS DUE TO OUTLYING SERIAL DILUTIONS
TABLE 16	QUALIFIED SAMPLE RESULTS DUE TO DIFFERENCES IN DUAL COLUMN RESULTS
TABLE 17	QUALIFIED SAMPLE RESULTS DUE TO LOW PERCENT SOLIDS
TABLE 18	QUALIFIED SAMPLE RESULTS DUE TO VARIABILITY IN FIELD DUPLICATE RESULTS
TABLE 19	QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE RINSE BLANKS
TABLE 20	QUALIFIED SAMPLE RESULTS DUE TO ANALYTE CONCENTRATIONS IN THE TRIP BLANK
TABLE 21A	TENTATIVELY IDENTIFIED COMPOUNDS - WATER
TABLE 21B	TENTATIVELY IDENTIFIED COMPOUNDS - SOIL

1.0 INTRODUCTION

The following document details an assessment and validation of analytical results reported by H2M Labs, Inc. (H2M) for soil and groundwater samples collected in support of the Phase II RCRA Facility Investigation (RFI) at the Occidental Chemical Corporation Site in Delaware City, Delaware. The samples were collected from August 1998 through April 1999. Sampling and analysis summaries are presented in Tables 1A and 1B.

The samples collected were analyzed for one or more of the following parameters depending on the objective of the sampling: target compound list (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), target analyte list (TAL) metals, cyanide, and various general chemistry parameters as detailed in Tables 1A and 1B. A summary of the analytical methodology is presented in Table 2. In addition to target compounds, tentatively identified compounds (TICs) were reported for the VOC and SVOC analyses.

Summaries of the analytical data are presented in Tables 3A, 3B and 3C. The quality assurance/quality control (QA/QC) criteria by which these data have been assessed are outlined in the analytical methods and the documents entitled:

- i) Region III Modification to National Functional Guidelines for Organic Data Review, Multi-Media, Multi-Concentration (OLM01.0-OLM01.9), September 1994;
- ii) Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses", April 1993; and
- iii) "Occidental Chemical Corporation, RCRA Facility Investigation Quality Assurance Project Plan, Delaware City, Delaware", February 1997 (QAPP).

Full CLP-equivalent raw data deliverables were provided by the laboratory. The data quality assessment and validation presented in the following subsections were performed based on the sample results and supporting QA/QC provided.

2.0 SAMPLE HOLDING TIMES

The method-specific holding time criteria are summarized in Table 3-3 of the QAPP. All sample extractions and/or analyses were performed within the specified holding times with the following exceptions (see Table 4 for a summary of sample qualifications):

- i) fifteen samples were analyzed for total organic carbon (TOC) one to three days past the 14 day holding time. The associated sample results were qualified as estimated (L) to reflect potential loss of analyte;
- ii) four samples were analyzed for mercury one day past the 28 day holding time. The associated sample results were qualified as estimated (L) to reflect potential loss of analyte;
- iii) ten samples were analyzed for sulfide one day past the 7 day holding time. The associated sample results were qualified as estimated (L) to reflect potential loss of analyte; and
- iv) five soil samples were re-extracted for SVOCs eight and nine days past the 14 day holding time. All SVOC results for these samples were qualified as estimated (J) to reflect potential loss of analytes.

All samples were properly preserved and cooled to 4°C(±2°C) after collection. All samples were received by the laboratory in good condition within two days of sample collection.

3.0 **GAS CHROMATOGRAPH/MASS SPECTROMETER (GC/MS) TUNING AND MASS CALIBRATION - VOCs AND SVOCs**

Prior to analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, the VOC and SVOC methods require the analysis of the specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the method before analysis is initiated. Analysis of the tuning compound must then be repeated every twelve hours throughout sample analysis to ensure the continued optimization of the instrument.

Instrument tuning data were reviewed. All tuning criteria were met for the analyses, indicating proper optimization of the instrumentation. Tuning compounds were analyzed at the required frequency throughout the VOC and SVOC analysis periods, with the exception of one sample, SD-2 Dup, which was analyzed 12 minutes outside of the 12 hour tune window. This analysis was judged to be valid based on the minor extent of the time exceedance.

4.0 INSTRUMENT CALIBRATION

4.1 GC/MS CALIBRATION - VOCs AND SVOCs

4.1.1 INITIAL CALIBRATION

To quantify compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed.

Linearity of the curve and instrument sensitivity were evaluated against the following criteria:

- i) all relative response factors (RRFs) must be greater than or equal to 0.05; and
- ii) percent relative standard deviation (%RSD) values must not exceed 30 percent.

The initial calibration data for VOCs and SVOCs were reviewed and all RRFs and %RSDs met the above criteria with the following exception: the %RSD for tetrachloroethene was 34 percent for one initial calibration, which did not meet the linearity requirement. Associated sample results for this compound, which were above the reporting limit, were qualified as estimated (J) (see Table 5).

4.1.2 CONTINUING CALIBRATION

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

-
- i) all RRF values must be greater than or equal to 0.05; and
 - ii) percent difference (%D) values must not exceed 25 percent.

Calibration standards were analyzed at the required frequency and the results met the above criteria for instrument sensitivity and linearity of response with the following exceptions (see Table 6 for a summary of sample data qualifications):

- i) %D values for some of the VOC compounds exceeded the 25 percent criterion. All associated sample results above the reporting levels were qualified as estimated (J) to reflect variability in instrument response. Non-detect data for these samples were judged to be acceptable;
- ii) %D values for VOCs 2-butanone, 2-hexanone and acetone were greater than 50 percent on various analysis dates, indicating significant changes in instrument response. All associated sample results were qualified as estimated;
- iii) %D values for some SVOC compounds exceeded the 25 percent criterion. All associated sample results above the reporting limits were qualified as estimated (J) and all non-detect results were judged to be acceptable based on adequate instrument sensitivity; and
- iv) %D values for SVOCs 2,4-dinitrophenol, 4-nitrophenol and hexachlorocyclopentadiene showed a significant change in instrument response of greater than 50 percent on various analysis dates. All associated sample results were qualified as estimated (J) to reflect potential variability in these data.

4.2 GC CALIBRATION - HEXACHLOROBENZENE (WATER SAMPLES ONLY)

To ensure that instrument performance was acceptable throughout hexachlorobenzene analysis, the data were evaluated against method criteria for initial and continuing instrument calibration. Since the method requires dual column analysis of all samples, the criteria have been applied to both columns.

4.2.1 INITIAL CALIBRATION

To quantify compounds of interest, calibration of the GC/ECD over a specific concentration range must be performed. Initially, five-point calibration curves are analyzed. Linearity of the calibration curves is acceptable if all RSD values are less than or equal to 20.0 percent.

Retention time windows are also calculated from the initial calibration analyses. These windows are then used to identify the target compound in subsequent analyses.

All initial calibration standards were analyzed at the required frequencies. All retention time and linearity criteria were satisfied.

4.2.2 CONTINUING CALIBRATION

To ensure that the calibration of the instrument is valid throughout the sample analysis period, continuing calibration standards are analyzed and evaluated on a regular basis. After the initial calibration sequence, medium level standards are analyzed every twelve hours.

To evaluate the continued linearity of the calibration, %D values are calculated for each compound in all continuing standards and assessed against an acceptance criterion of 25 percent.

To ensure that compound retention times do not vary over the analysis period, all retention times for continuing calibration compounds must fall within the established retention time windows.

All continuing calibrations met the above criteria.

4.3 INORGANICS CALIBRATION

4.3.1 INITIAL CALIBRATION

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For trace inductively coupled plasma (ICP) analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury analyses, a calibration blank and a minimum of four standards must be analyzed to establish the analytical curve. Total suspended solids (TSS) analysis is a gravimetric determination. Sulfide and hardness analyses are titrimetric analyses. These general

chemistry parameters do not require calibration curves. For the remaining general chemistry parameters, calibration is performed based on the analysis of five standards and a blank. Resulting correlation coefficients for curves consisting of a blank and three or more standards must be at least 0.995.

After calibration, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits:

<i>Analytical Method</i>	<i>Inorganic Species</i>	<i>Control Limits (Percent)</i>
ICP	Metals	90 - 110
Cold Vapor AA	Mercury	80 - 120
Various	General Chemistry	85 - 115

Upon review of the data, it was determined that all inorganic calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met. The laboratory effectively demonstrated that instrumentation used for these analyses were properly calibrated prior to sample analyses.

4.3.2 CONTINUING CALIBRATION

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

4.3.3 CONTRACT REQUIRED DETECTION LIMIT (CRDL) STANDARD ANALYSES

To verify the linearity of the ICP calibration near the CRDL, a standard must be analyzed which contains specified ICP analytes at a concentration of two times the CRDL, or twice the instrument detection limit (IDL), whichever is greater. This standard must be analyzed at the beginning and end of each sample analysis run or a minimum of twice per eight hour working shift.

Region III control limits of 90 to 110 percent were used to evaluate the data. Several CRDL recoveries were marginally outside the control limits. A summary of sample qualifications is included in Table 7. For high CRDL recoveries, all associated detected sample results less than two times the CRDL were qualified as estimated to reflect a potential high bias (K). Non-detect data were not impacted by the indicated high bias. For low CRDL recoveries, all associated sample results less than two times the CRDL were qualified as estimated (L) to reflect a potential low bias.

5.0 SURROGATE SPIKE RECOVERIES - ORGANICS

In accordance with the methods employed, all samples, blanks, and standards analyzed for VOCs, SVOCs, and hexachlorobenzenes were spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of individual sample matrices on analytical efficiency and are assessed against method control limits. For the SVOC method, it is acceptable for one surrogate recovery per fraction (base neutral or acid phenolic) to fall outside of these limits, provided it is greater than 10 percent.

All surrogate recoveries met the method criteria with the following exceptions (see sample qualification summary in Table 8):

- i) for VOC samples WB16 (6-8')DL, SED-6, A-37S, and SC-22, one surrogate had a slightly high recovery, and the remaining two surrogate recoveries for each of these samples were acceptable. Results for these samples which were above the reporting limit were qualified as estimated (J) to reflect a potential high bias;
- ii) VOC samples WB16 (6-8'), SB12 (12-14'), SB12GW, WB16 (6-8') Dup, A-25S, A-37D, A-38D, C-22, C-C23, C-24, and SW-10 had high recoveries for two out of three surrogates. In most cases, the high recoveries were a result of matrix interferences caused by high concentrations of organic compounds in the samples. All results for these samples above the reporting limits were qualified as estimated (K) to reflect a potential high bias;
- iii) high recoveries for two or more acid/phenolic surrogates were reported for groundwater sample SB-12 GW. Associated sample results above the reporting limit were qualified as estimated (K) to reflect a potential high bias. Non-detect data would not have been impacted;
- iv) low tetrachloro-m-xylene (TCMX) and decachlorobiphenyl (DCB) recoveries were reported for both gas chromatographic (GC) columns for the hexachlorobenzene samples A-29S field duplicate, A-23, A-32D, and SW-10. All associated results were non-detect and were qualified as low biases (L);
- v) various combinations of low recoveries for TCMX and/or DCB were reported on one or both GC columns. The associated sample data was qualified as estimated per the EPA Region III Guidelines (J or L); and
- vi) a high TCMX and low DCB recovery was reported for sample SB-11. The associated sample result was qualified as estimated (J) based on the variability demonstrated.

6.0 INTERNAL STANDARD RECOVERIES - VOCS AND SVOCs

To ensure that changes in GC/MS response and sensitivity do not affect sample analysis results, internal standard compounds are added to all samples, blanks, and spike samples prior to VOC and SVOC analyses. All results are calculated as a ratio of the internal standard response. The criteria by which the internal standard results are assessed are as follows:

- i) internal standard area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard; and
- ii) the retention time of the internal standard must not vary more than ± 30 seconds from the associated calibration standard.

The sample IS results met the above criteria with the following exceptions (see Table 9 for sample results qualifications):

- i) the recoveries for the third VOC IS were slightly low (37 to 41 percent) for samples SED-11, SB-13, SB-13 Dup, SD-7, and C-22. All sample results for the compounds associated with this IS were qualified as estimated (J);
- ii) the recoveries for the third VOC IS in samples WB16 (6-8'), WB16 (14-16'), A-35S, A-37S, and C-23 were very low (<25 percent) due to matrix interferences. The samples were diluted to reduce the matrix interferences and the IS recoveries were acceptable. Results for the compounds associated with this IS were reported from the diluted sample analyses, while the remaining results were reported from the original analyses;
- iii) the VOC IS recoveries for the matrix spike (MS) of soil sample SS-11 were low and the resulting spike recoveries were outlying. The MS analysis was disregarded (see Section 10), and only the matrix spike duplicate (MSD) sample was used to assess analytical accuracy;
- iv) the sixth SVOC IS recovery for sample A-38D was extremely low (<25 percent). All associated compound results were non-detect and rejected due to the poor analytical response; and
- v) sample SS-12A exhibited low SVOC IS recoveries (37 and 33 percent) for two IS compounds. All associated compound results were qualified as estimated (J).

7.0 METHOD BLANK ANALYSES

The purpose of assessing the results of method blank analyses is to determine the existence and magnitude of sample contamination introduced during analysis. Method blanks are prepared from deionized water and analyzed as samples.

For this study, method blanks were analyzed at a minimum frequency of one per analytical batch and the data were non-detect with the following exceptions (see Table 10 for sample qualifications):

- i) low levels of methylene chloride, acetone, 2-hexanone, carbon disulfide, chlorobenzene, chloroform, and/or tetrachloroethene were detected in some of the VOC method blanks prepared and analyzed with the samples. Methylene chloride and acetone results in the associated samples at levels up to ten times the method blank concentrations were qualified to indicate a potential high bias (B). Chloroform, 2-hexanone, carbon disulfide, chlorobenzene, and tetrachloroethene results up to five times the blank concentrations were qualified (B);
- ii) low levels of bis-2(ethylhexyl)phthalate were detected in five of the method blanks prepared and analyzed with the groundwater samples. Associated sample results up to ten times these concentrations were qualified (B) to reflect a potential high bias; and
- iii) low level concentrations of several metals were detected above the instrument detection limits (IDLs) in some of the continuing calibration blanks (CCBs) and preparation blanks. Sample results greater than the IDL but less than five times the amount detected in the associated blank were qualified (B) to reflect a potential high bias.

8.0 BLANK SPIKE ANALYSES - ORGANICS

Blank spikes are prepared and analyzed as samples to assess the analytical efficiencies of the method employed, independent of sample matrix effects. Blank spikes were performed for all organic parameters analyses and the results were acceptable for all compounds spiked with the following exceptions (see Table 11 for sample qualifications):

- i) low recoveries were obtained for the VOCs 2-butanone and 2-hexanone on February 2, 1999. Associated sample results were qualified as estimated (J);
- ii) high recoveries were obtained for chlorobenzene and benzene on February 3, 1999. Associated positive sample results were qualified as estimated (J) to reflect a potential high bias;
- iii) a low recovery was obtained for 2-hexanone on December 11, 1998. The recovery for this compound was also low in the associated sample matrix spike (see September 10, 1998). On this basis, overall accuracy for this compound was questionable and all associated sample results for 2-hexanone were qualified as estimated (J) to reflect a potential low bias.
- iv) some high SVOC recoveries were observed. All associated positive results were qualified as estimated (J) and all non-detect results would not have been affected by the potential high bias;
- v) some low SVOC recoveries were observed. All associated sample results were qualified as estimated (J) to reflect the potential low bias; and
- vi) 3,3'-dichlorobenzidine was not recovered in the blank spike extracted on August 24, 1998 and n-nitrosodiphenylamine exhibited an extremely low recovery in the blank extracted December 11, 1998. All associated sample results for these compounds were non-detect and rejected due to poor analytical efficiency.

9.0 LABORATORY CONTROL SAMPLE ANALYSES - INORGANICS

The laboratory control sample (LCS) serves as a monitor of the overall performance of all steps in the analysis, including the sample preparation. LCSs were analyzed using the same sample preparation, analytical methods, and QA/QC procedures employed for the investigative samples.

LCSs were reported for all inorganics analyses. All LCS samples yielded recoveries within the established control limits, indicating acceptable overall laboratory performance.

10.0 **MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES - ORGANICS**

MS/MSD samples are prepared and analyzed with each sample batch. The recoveries of MS/MSD analyses are used to assess the analytical accuracy achieved on individual sample matrices. The RPD between the MS and MSD is used to assess analytical precision. Samples chosen for MS/MSD analyses are specified in Tables 1A and 1B.

All MS/MSD recoveries showed acceptable accuracy and precision with the following exceptions (see Table 12):

- i) the MS VOC recoveries for sample SB13 were disregarded due to low IS recoveries (see Section 6.0). Analytical accuracy for this sample was based only on the MSD analysis;
- ii) the VOC MS/MSD analyses of samples C-21, R-112, SS-11, and WB23 (4-6') yielded some low recoveries for target VOCs. The sample results for these compounds were qualified as estimated (J) to reflect a potential low bias. Overall accuracy for these compounds was judged to be acceptable based on the blank spike results; and
- iii) the VOC MS/MSD analyses of samples SW-2 and A-35S yielded high recoveries for some analytes. Results for these compounds in these samples were qualified as estimated (J) to reflect a potential high bias;
- iv) low SVOC MS and/or MSD recoveries were observed for various compounds. Sample results for these compounds were qualified as estimated (J) to reflect a potential low bias;
- v) variability was observed between some SVOC spike recoveries. The positive sample results for these compounds were qualified as estimated (J) and the non-detect results would not have been impacted by the variability;
- vi) SVOC 3,3'-dichlorobenzidine was not recovered in sample SW-2. Sample results for this compound were non-detect and rejected due to poor analyte efficiency; and
- ~~vii) no hexachlorobenzene recoveries were obtained for the MS/MSD of sample SB-13. Associated positive sample results were qualified as estimated (J) to reflect the potential low bias and associated non-detect results were rejected based on the poor analytical efficiency demonstrated.~~

11.0 MATRIX SPIKE ANALYSES - INORGANICS

To evaluate the effects of sample matrices on the digestion, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS samples. The established control limits for inorganic matrix spike recoveries are 75 to 125 percent. Spike recoveries are not assessed for samples having original concentrations significantly greater than the spike concentration (>four times).

Most spike recoveries met the above criteria. A summary of qualifications for samples associated with outlying MS recoveries is included in Table 13. Outliers were as follows:

- i) high copper, manganese, mercury, silver, and TOC MS recoveries were reported for some samples. All associated detected sample results were qualified as estimated (K) to reflect a potential high bias; and
- ii) low mercury, silver, antimony, cadmium, lead, and selenium MS recoveries were reported for some samples. Associated sample results were qualified as estimated (L) to reflect a potential low bias; and
- iii) very low antimony MS recoveries (25 and 26 percent) were reported for the analysis of soil samples SS-11 and WB-23 (4-6'); all associated non-detect results were rejected and associated detected results were qualified as estimated (L) based on the poor analytical performance and demonstrated low bias.

12.0 DUPLICATE SAMPLE ANALYSES - INORGANICS

For inorganic parameters, analytical precision is evaluated based on the analysis of duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory at the frequency specified in the QAPP.

Laboratory duplicate results are assessed against a maximum RPD of 35 percent for soil samples and 20 percent for groundwater samples. Metals sample results less than five times the CRDL are evaluated based on the difference between the sample and duplicate results, which should not exceed the CRDL for groundwaters and two times the CRDL for soils.

Most duplicate analyses met the above criteria. Detected sample results associated with outlying duplicate analyses were qualified as estimated (J) based on the indicated variability (see Table 14).

13.0 ICP SERIAL DILUTION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per 20 investigative samples is analyzed at a five-fold dilution. For samples yielding analyte concentrations greater than 50 times the IDL, the serial dilution results must agree within 10 percent of the original results.

Serial dilutions were performed at the required frequency. Several serial dilution analyses showed potential interference. Associated sample results of significant concentration were qualified as estimated (J) (see Table 15).

14.0 ICP INTERFERENCE CHECK SAMPLE ANALYSIS (ICS)

To verify that proper inter-element and background correction factors have been established by the laboratory, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium, and iron and are analyzed at the beginning and end of each sample analysis period.

ICS analysis results were evaluated for all samples. All ICS recoveries were within the established control limits of 80 to 120 percent. Some false positives were detected, but the associated samples did not have comparable interferent levels and further evaluation was not necessary.

15.0 MISCELLANEOUS

15.1 DUAL COLUMN CONFIRMATION OF HEXACHLOROBENZENE

In accordance with the analytical method, samples are analyzed on two dissimilar columns and the lower of the two results is reported. Differences in the hexachlorobenzene results obtained from one column versus the other may be a reflection of interferences co-eluting with the analyte on one of the two columns. When significant differences were observed, the results were qualified as estimated (J) in the event that the differences in quantitation were caused by something other than co-eluting interferences (see Table 16).

15.2 REPORTING OF SOIL RESULTS

All soil results were reported on a dry-weight basis. Some soil samples contained greater than 50 percent moisture and since this can lead to variability in the analyses, all associated sample results were qualified as estimated (J) (see Table 17).

15.3 TOTAL AND DISSOLVED METALS

Based on a discrepancy in the total and dissolved zinc results for sample SW-8, both sample results have been qualified as estimated (J). A discrepancy was also noted in the original total and dissolved mercury results for sample A-17. A second sample was collected from this location on April 23, 1999, and analyzed for total and dissolved mercury. The results for the second set of samples were both non-detect, and are reported for sample A-17 in Table 3A.

16.0 FIELD QA/QC

16.1 FIELD DUPLICATES

To assess the analytical and sampling protocol precision, field duplicates (as identified in Tables 1A, 1B, and 1C) were collected and submitted "blind" to the laboratory. The RPD criteria specified in the QAPP were used to evaluate the data. Most results showed good precision for sampling and analytical procedures. Some field duplicate results for VOCs, SVOCs, TOC, TSS, various metals, and hexachlorobenzene exhibited variability, and the associated sample results were qualified as estimated (J) (see Table 18).

16.2 RINSE BLANKS

Rinse blank results identify possible contamination introduced during sample collection and/or analysis. Rinse blanks were collected at the frequency specified in the QAPP, and the results were non-detect with some exceptions.

All positive sample results at concentrations in the range of the rinse blank concentrations (within five times for most analytes and within ten times for common laboratory artifacts) were qualified (B) as summarized in Table 19.

16.3 TRIP BLANKS - VOCS (WATER SAMPLES ONLY)

Trip blanks are transported, stored, and analyzed with the investigative samples to identify potential cross-contamination of VOCs. Trip blanks were collected at the proper frequency, and all results were non-detect for the analytes of interest with the exception of some low level methylene chloride, tetrachloroethene, chlorobenzene, and acetone concentrations. Associated sample results at concentrations similar to the blank concentrations were qualified (B) to reflect a potential high bias (see Table 20).

17.0 TICS - VOCS AND SVOCS

Chromatographic peaks observed during volatile and semi-volatile sample analyses which are not target compounds, surrogates, or internal standards, are potential TICs. The ten largest TICs for the VOC analysis and 20 largest TICs for the SVOC analysis with areas greater than 10 percent of the area of the nearest internal standard are tentatively identified and quantitated.

Summaries of the TICs are presented in Tables 21A and 21B. TICs which were present in laboratory blanks or were identified as aldol condensation products were rejected and are not included in the tables.

18.0 CONCLUSION

Based on the assessment detailed in the foregoing, the data produced by H2M are acceptable with the specific exceptions and qualifications noted herein.

TABLE 1A
SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Sample ID	Location	Date	Time	TCL VOCs	TCL SVOCs	HCB	TAL Metals (total)	TAL Metals (dissolved)	TSS	Chloride	Sulfate	Hardness	Comments
GW-7462-DJT-006	A-11A	12/02/98	0900	X	X	X	X	X	X	X	X		
GW-7462-DJT-007	A-12	12/02/98	1000	X	X	X	X	X	X	X	X		
GW-7462-DJT-008	A-13	12/02/98	0830	X	X	X							
GW-7462-DJT-009	A-14	12/02/98	0930	X	X	X							
GW-7462-DJT-010	A-15	12/02/98	1100	X	X	X							
GW-7462-DJT-011	A-16	12/02/98	0845	X	X	X							
GW-7462-DJT-001	A-17	12/01/98	1200	X	X	X	X	X	X	X	X		
GW-7462-42399-BTF-A17	A-17RE	04/23/99	1215				X	X					Mercury Only
GW-7462-DJT-037	A-18	12/03/98	1700	X	X	X	X	X	X	X	X		
GW-7462-DJT-42	A-20	12/03/98	1600	X	X	X	X	X	X	X	X		MS/MSD
GW-7462-DJT-012	A-23	12/02/98	1145	X	X	X							
GW-7462-DJT-013	A-24	12/02/98	0945	X	X	X							
GW-7462-DJT-44	A-25D	12/03/98	1600	X	X	X	X	X	X	X	X		
GW-7462-DJT-43	A-25S	12/03/98	1530	X	X	X	X	X	X	X	X		
GW-7462-DJT-002	A-26D	12/01/98	1245	X	X	X	X	X	X	X	X		
GW-7462-DJT-003	A-26OB	12/01/98	1415	X	X	X	X	X	X	X	X		
GW-7462-DJT-004	A-26S	12/01/98	1530	X	X	X	X	X	X	X	X		
GW-7462-DJT-024	A-27D	12/03/98	1300	X	X	X	X	X	X	X	X		
GW-7462-DJT-025	A-27S	12/03/98	1330	X	X	X	X	X	X	X	X		
GW-7462-DJT-026	A-29D	12/02/98	1500	X	X	X	X	X	X	X	X		
GW-7462-DJT-27	A-29OB	12/02/98	1545	X	X	X	X	X	X	X	X		
GW-7462-DJT-28	A-29S	12/02/98	1600	X	X	X	X	X	X	X	X		
GW-7462-DJT-21	A-29S	12/02/98	1530	X	X	X	X	X	X	X	X		Duplicate of GW-7462-DJT-28
GW-7462-DJT-029	A-30D	12/03/98	0945	X	X	X	X	X	X	X	X		
GW-7462-DJT-030	A-30OB	12/02/98	1630	X	X	X	X	X	X	X	X		
GW-7462-DJT-031	A-31D	12/03/98	0845	X	X	X	X	X	X	X	X		
GW-7462-DJT-032	A-31OB	12/03/98	1000	X	X	X	X	X	X	X	X		

TABLE 1A
SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Sample ID	Location	Date	Time	TCL VOCs	TCL SVOCs	HCB	TAL Metals (total)	TAL Metals (dissolved)	TSS	Chloride	Sulfate	Hardness	Comments
GW-7462-DJT-33	A-32D	12/03/98	1030	X	X	X	X	X	X	X	X		
GW-7462-DJT-35	A-32OB	12/03/98	0900	X	X	X	X	X	X	X	X		
GW-7462-DJT-36	A-32S	12/03/98	0945	X	X	X	X	X	X	X	X		
GW-7462-DJT-34	A-32S	12/03/98	0930	X	X	X	X	X	X	X	X		Duplicate of GW-7462-DJT-36
GW-7462-DJT-38	A-33D	12/03/98	1645	X	X	X	X	X	X	X	X		
GW-7462-DJT-40	A-33S	12/03/98	1600	X	X	X	X	X	X	X	X		
GW-7462-DJT-017	A-34D	12/02/98	1300	X	X	X	X	X	X	X	X		
GW-7462-DJT-018	A-34S	12/02/98	1400	X	X	X	X	X	X	X	X		
GW-7462-DJT-019	A-35D	12/02/98	1445	X	X	X	X	X	X	X	X		
GW-7462-DJT-020	A-35S	12/02/98	1430	X	X	X	X	X	X	X	X		MS/MSD
GW-7462-DJT-022	A-36D	12/03/98	1245	X	X	X	X	X	X	X	X		
GW-7462-DJT-023	A-36S	12/03/98	1200	X	X	X	X	X	X	X	X		
GW-7462-DJT-046	A-37D	12/04/98	1045	X	X	X	X	X	X	X	X		
GW-7462-DJT-047	A-37S	12/04/98	0945	X	X	X	X	X	X	X	X		
GW-7462-DJT-048	A-38D	12/04/98	0900	X	X	X	X	X	X	X	X		
GW-7462-DJT-049	A-39D	12/04/98	0900	X	X	X	X	X	X	X	X		
GW-7462-DJT-045	A-39D	12/04/98	0845	X	X	X	X	X	X	X	X		Duplicate of GW-7462-DJT-049
GW-7462-DJT-050	A-39S	12/04/98	0915	X	X	X	X	X	X	X	X		
GW-7462-DJT-014	A-6A	12/02/98	1200	X	X	X							
GW-7462-DJT-015	A-7A	12/02/98	1330	X	X	X							
GW-7462-DJT-016	A-8	12/02/98	1445	X	X	X	X	X	X	X	X		
GW-7462-DJT-005	B-5	12/01/98	1530	X	X	X	X	X	X	X	X		
7462-12599-JG-C22	C-22	01/25/99	1100	X	X	X	X	X	X			X	
7462-12699-JG-C24	C-24	01/26/99	1300	X	X	X	X	X	X			X	
GW-7462-DJT-051	R-110	12/04/98	1030	X	X	X	X	X	X	X	X		
GW-7462-DJT-041	R-112	12/04/98	0900	X	X	X	X	X	X	X	X		MS/MSD
0111165 SB-10 GW	SB-10	08/12/98	1415	X	X	X							

TABLE 1A
SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Sample ID	Location	Date	Time	TCL VOCs	TCL SVOCs	HCB	TAL Metals (total)	TAL Metals (dissolved)	TSS	Chloride	Sulfate	Hardness	Comments
0111166 SB-11 GW	SB-11	08/13/98	1030	X	X	X							
0111167 SB-12 GW	SB-12	08/14/98	0830	X	X	X							
0111170 SB-13	SB-13	08/18/98	1300	X									
0111171 SB-14	SB-13	08/18/98	1300	X									
0111170 SB-13GW	SB-13	08/19/98	1300		X	X							MS/MSD Duplicate of 0111170 SB-13
0111171 SB-14	SB-13	08/19/98	1300		X	X							MS/MSD Duplicate of 0111170 SB-13 GW
SW-1	SW-1	12/17/98	1505	X	X	X	X	X	X			X	
SW-2	SW-2	12/17/98	1145	X	X	X	X	X	X			X	
SW-X	SW-2	12/17/98	1145	X	X	X	X	X	X			X	MS/MSD Duplicate of SW-2
SW-3	SW-3	12/17/98	1305	X	X	X	X	X	X			X	
SW-4	SW-4	12/16/98	1505	X	X	X	X	X	X			X	
SW-5	SW-5	12/16/98	1435	X	X	X	X	X	X			X	
SW-6	SW-6	12/15/98	1450	X	X	X	X	X	X			X	
SW-8	SW-8	12/15/98	1130	X	X	X	X	X	X			X	
SW-9	SW-9	12/16/98	1355	X	X	X	X	X	X			X	
7462-12699-JG-SW10	SW-10	01/26/99	1500	X	X	X	X	X	X			X	
7462-12699-JG-SW11	SW-11	01/26/99	1430	X	X	X	X	X	X			X	
7462-12699-JG-SW12	SW-12	01/26/99	1400	X	X	X	X	X	X			X	
W-7462-2999-JG-TB	-	02/09/99	-	X									Trip Blank
0111240	-	08/12/98	-	X									Trip Blank
0111253	-	08/14/98	-	X									Trip Blank
0111252	-	08/18/98	-	X									Trip Blank
0111251	-	08/19/98	-	X									Trip Blank
RB-7462-DJT-052	-	12/01/98	1600	X	X	X	X	X	X	X	X		Rinse Blank
Trip Blank	-	12/01/98	-	X									Trip Blank
RB-7462-DJT-053	-	12/02/98	1530	X	X	X							Rinse Blank
Trip Blank	-	12/02/98	-	X									Trip Blank

TABLE 1A
SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

<i>Sample ID</i>	<i>Location</i>	<i>Date</i>	<i>Time</i>	<i>TCL VOCs</i>	<i>TCL SVOCs</i>	<i>HCb</i>	<i>TAL Metals (total)</i>	<i>TAL Metals (dissolved)</i>	<i>TSS</i>	<i>Chloride</i>	<i>Sulfate</i>	<i>Hardness</i>	<i>Comments</i>
RB-7462-DJT-054	-	12/03/98	1400	X	X	X	X	X	X	X	X		Rinse Blank
Trip Blank	-	12/03/98	-	X									Trip Blank
RB-7462-DJT-055	-	12/04/98	0800	X	X	X	X	X	X	X	X		Rinse Blank
Trip Blank	-	12/04/98	-	X									Trip Blank
Trip Blank	-	12/17/98	-	X									Trip Blank
SW-7462-12599-JG-RB	-	01/25/99	1600	X	X	X	X	X	X				Rinse Blank

Notes:

- Not Applicable.
- HCb Hexachlorobenzene.
- MS Matrix Spike.
- MSD Matrix Spike Duplicate.
- SVOCs Semi-Volatile Organic Compounds (includes 1,2-Diphenylhydrazine).
- RE Denotes sample recollection.
- TAL Target Analyte List.
- TCL Target Compound List.
- TSS Total Suspended Solids.
- VOCs Volatile Organic Compounds.

TABLE 1B
SAMPLE COLLECTION AND ANALYSIS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Sample ID	Location	Date	Time	TCL VOCs	TCL SVOCs	HCB	TAL Metals	TOC	Sulfide	Ammonia	Grain Size	Methyl Mercury	Mercury	Comments
7462-92498-BTF-A34S	A-34S (19-21)	09/24/98	1330										X	
7462-11399-JAG-C21	C-21	01/13/99	1300	X	X	X	X	X	X	X	X	X		MS/MSD
7462-11399-JAG-C26	C-21	01/13/99	1500	X	X	X	X	X	X	X	X	X		Duplicate of 7462-11399-JAG-C21
7462-11399-JAG-C27	C-21C	01/13/99	-	X	X	X	X	X	X	X	X	X		Sample submitted in the sample core.
C-7462-12599-JG-C22	C-22	01/25/99	1100	X	X	X	X	X	X	X	X	X		
C-7462-12699-JG-C20	C-C20	01/26/99	1200	X	X	X	X	X	X	X	X	X		
C-7462-12599-JG-C23	C-C23	01/25/99	1300	X	X	X	X	X	X	X	X	X		
C-7462-12699-JG-C24	C-C24	01/26/99	1300	X	X	X	X	X	X	X	X	X		
C-7462-12599-JG-C25	C-C25	01/25/99	1500	X	X	X	X	X	X	X	X	X		
0111017 SB-10 (2-4)	SB-10 (2-4)	08/12/98	1246	X	X	X	X	X						
0111018 SB-11 (6-8)	SB-11 (6-8)	08/13/98	0930	X	X	X	X	X						
0111019 SB-12 (12-14)	SB-12 (12-14)	08/13/98	1430	X	X	X	X	X						
0111024 SB-13 (0-2)	SB-13 (0-2)	08/18/98	1000	X	X	X	X	X						
S-7462-12699-JG-C22	S-C22	01/25/99	1100	X	X	X	X	X	X	X	X	X		
S-7462-12699-JG-C24	S-C24	01/26/99	1300	X	X	X	X	X	X	X	X	X		
0111085 SED-1	SED-1	08/06/98	0900	X	X	X	X							MS/MSD
0111086 SED-2	SED-2	08/05/98	1600	X	X	X	X							
0111087 SED-3	SED-3	08/05/98	1535	X	X	X	X							
0111090 SED-4	SED-4	08/05/98	1315	X	X	X	X							
0111104 SED-5	SED-5	08/04/98	1245	X	X	X	X							
0111088 SED-6	SED-6	08/05/98	1500	X	X	X	X							
0111089 SED-7	SED-7	08/05/98	1405	X	X	X	X							
0111105 SED-8	SED-8	08/04/98	1050	X	X	X	X							
0111084 SED-9	SED-9	08/06/98	0930	X	X	X	X							
0111083 SED-10	SED-10	08/06/98	1000	X	X	X	X							
0111082 SED-15	SED-10	08/06/98	1000	X	X	X	X							Duplicate of 0111083 SED-10
0111081 SED-11	SED-11	08/06/98	1035	X	X	X	X							
0111080 SED-12	SED-12	08/06/98	1050	X	X	X	X							

TABLE 1B
SAMPLE COLLECTION AND ANALYSIS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

<i>Sample ID</i>	<i>Location</i>	<i>Date</i>	<i>Time</i>	<i>TCL VOCs</i>	<i>TCL SVOCs</i>	<i>HCB</i>	<i>TAL Metals</i>	<i>TOC</i>	<i>Sulfide</i>	<i>Ammonia</i>	<i>Grain Size</i>	<i>Methyl Mercury</i>	<i>Mercury</i>	<i>Comments</i>
0111079 SED-13	SED-13	08/06/98	1100	X	X	X	X							
0111076 SED-14	SED-14	08/06/98	1310	X	X	X	X							
SD-1	SD-1	12/17/98	1450	X	X		X	X	X	X	X	X		
SD-2	SD-2	12/17/98	1225	X	X		X	X	X	X	X	X		MS/MSD
SD-X	SD-2	12/17/98	1225	X	X		X	X	X	X	X	X		Duplicate of SD-2
SD-3	SD-3	12/17/98	1320	X	X		X	X	X	X	X	X		
SD-4	SD-4	12/16/98	1515	X	X		X	X	X	X	X	X		
SD-5	SD-5	12/16/98	1435	X	X		X	X	X	X	X	X		
SD-6	SD-6	12/15/98	1525	X	X		X	X	X	X	X	X		
SD-7	SD-7	12/15/98	1425	X	X		X	X	X	X	X	X		
SD-8	SD-8	12/15/98	1230	X	X		X	X	X	X	X	X		
SD-9	SD-9	12/16/98	1410	X	X		X	X	X	X	X	X		
0111097 SS-11	SS-11	08/05/98	0940	X	X	X	X	X						MS/MSD
0111096 SS-11A	SS-11A	08/05/98	0950	X	X	X	X	X						
0111093 SS-12	SS-12	08/05/98	1045	X	X	X	X	X						
0111092 SS-12B	SS-12	08/05/98	1045	X	X	X	X	X						Duplicate of 0111093 SS-12
0111091 SS-12A	SS-12A	08/05/98	1100	X	X	X	X	X						
0111103 SS-13	SS-13	08/04/98	1400	X	X	X	X	X						
0111102 SS-14	SS-14	08/04/98	1445	X	X	X	X	X						
0111101 SS-15	SS-15	08/04/98	1505	X	X	X	X	X						
0111099 SS-16	SS-16	08/04/98	1545	X	X	X	X	X						
0111100 SS-17	SS-17	08/04/98	1525	X	X	X	X	X						
0111098 SS-18	SS-18	08/04/98	1555	X	X	X	X	X						
0111052 WB-14 (6-8)	WB-14 (6-8)	08/19/98	1100	X	X	X	X	X						
0111035 WB-15 (8-10)	WB-15 (8-10)	08/25/98	1215	X	X	X	X	X						
0111051 WB-16 (6-8)	WB-16 (6-8)	08/19/98	1415	X	X	X	X	X						
0111050 WB-16 (14-16)	WB-16 (6-8)	08/19/98	1415	X	X	X	X	X						Duplicate of 0111051 WB-16 (6-8)
0111054 WB-17 (0-2)	WB-17 (0-2)	08/19/98	0845	X	X	X	X	X						MS/MSD

TABLE 1B
SAMPLE COLLECTION AND ANALYSIS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Sample ID	Location	Date	Time	TCL VOCs	TCL SVOCs	HCB	TAL Metals	TOC	Sulfide	Ammonia	Grain Size	Methyl Mercury	Mercury	Comments
0111053 WB-17 (6-8)	WB-17 (6-8)	08/19/98	0915	X	X	X	X	X						
0111056 WB-18 (0-2)	WB-18 (0-2)	08/18/98	1400	X	X	X	X	X						
0111055 WB-18 (8-10)	WB-18 (8-10)	08/18/98	1420	X	X	X	X	X						
0111045 WB-19 (0-2)	WB-19 (0-2)	08/20/98	1425	X	X	X	X	X						
0111044 WB-19 (8-10)	WB-19 (8-10)	08/20/98	1500	X	X	X	X	X						
0111043 WB-19 (14-16)	WB-19 (8-10)	08/20/98	1500	X	X	X	X	X						Duplicate of 0111044 WB-19 (8-10)
0111038 WB-20 (8-10)	WB-20 (8-10)	08/24/98	0955	X	X	X	X	X						
0111039 WB-21 (6-8)	WB-21 (6-8)	08/24/98	0915	X	X	X	X	X						
011049 WB-22 (2-4)	WB-22 (2-4)	08/19/98	1545	X	X	X	X	X						
011048 WB-23 (4-6)	WB-23 (4-6)	08/20/98	1020	X	X	X	X	X						MS/MSD
0111036 WB-24 (4-6)	WB-24 (4-6)	08/24/98	1320	X	X	X	X	X						
0111037 WB-25 (4-6)	WB-25 (4-6)	08/24/98	1100	X	X	X	X	X						
0111047 WB-26 (0-2)	WB-26 (0-2)	08/20/98	1245	X	X	X	X	X						
0111046 WB-26 (6-8)	WB-26 (6-8)	08/20/98	1340	X	X	X	X	X						
0111058 WB-27 (0-2)	WB-27 (0-2)	08/17/98	1400	X	X	X	X	X						
0111057 WB-27 (6-8)	WB-27 (6-8)	08/17/98	1445	X	X	X	X	X						
0111060 WB-28 (0-2)	WB-28 (0-2)	08/17/98	1255	X	X	X	X	X						
0111059 WB-28 (4-6)	WB-28 (4-6)	08/17/98	1315	X	X	X	X	X						
0111062 WB-29 (0-2)	WB-29 (0-2)	08/17/98	1045	X	X	X	X	X						
0111061 WB-29 (4-6)	WB-29 (4-6)	08/17/98	1100	X	X	X	X	X						
0111022 WB-30 (0-2)	WB-30 (0-2)	08/14/98	1305	X	X	X	X	X						
0111023 WB-30 (4-6)	WB-30 (4-6)	08/14/98	1325	X	X	X	X	X						
0111020 WB-31 (0-2)	WB-31 (0-2)	08/14/98	1033	X	X	X	X	X						
0111021 WB-31 (2-4)	WB-31 (2-4)	08/14/98	1105	X	X	X	X	X						
0111064 WB-32 (0-2)	WB-32 (0-2)	08/17/98	0900	X	X	X	X	X						
0111063 WB-32 (4-6)	WB-32 (4-6)	08/17/98	0955	X	X	X	X	X						
0111025 FBLK-8/20/98	-	08/20/98	0800	X	X		X							Field Blank
0111026 RNSBLK-8/20/98	-	08/20/98	0815	X	X		X							Rinse Blank

TABLE 1B
SAMPLE COLLECTION AND ANALYSIS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

<i>Sample ID</i>	<i>Location</i>	<i>Date</i>	<i>Time</i>	<i>TCL VOCs</i>	<i>TCL SVOCs</i>	<i>HCb</i>	<i>TAL Metals</i>	<i>TOC</i>	<i>Sulfide</i>	<i>Ammonia</i>	<i>Grain Size</i>	<i>Methyl Mercury</i>	<i>Mercury</i>	<i>Comments</i>
0111000 FBLK-8/25/98	-	08/25/98	0845	X	X		X	X						Field Blank
0111001 RNSBLK-8/25/98	-	08/25/98	0900	X	X		X	X						Rinse Blank
Sediment Rinse Blank	-	12/17/98	1025	X	X		X	X	X	X	X	X		Rinse Blank
C-7462-12599-JG-RB	-	01/25/99	1600	X	X	X	X	X	X	X	X	X		Rinse Blank
S-7462-12699-BTF-RB	-	01/26/99	1000	X										Rinse Blank
0111094 RNSBLK-8/5/98	-	08/05/98	1025	X	X		X	X						Rinse Blank
0111095 FBLK-8/5/98	-	08/05/98	1015	X	X		X	X						Field Blank
0111077 RNSBLK-8/6/98	-	08/06/98	1255	X	X		X							Rinse Blank
0111078 FBLK-8/6/98	-	08/06/98	1245	X	X		X							Field Blank

Notes:

- Not Applicable.

MS Matrix Spike.

MSD Matrix Spike Duplicate.

SVOCs Semi-Volatile Organic Compounds (includes 1,2-Diphenylhydrazine).

TAL Target Analyte List.

TCL Target Compound List.

VOCs Volatile Organic Compounds.

HCb Hexachlorobenzene.

TOC Total Organic Carbon.

TABLE 1C
SAMPLE COLLECTION AND ANALYSIS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

<i>Sample ID</i>	<i>Location</i>	<i>Date</i>	<i>Time</i>	<i>TCL VOCs</i>	<i>TCL SVOCs</i>	<i>HCB</i>	<i>TAL Metals (total)</i>	<i>TAL Metals (dissolved)</i>	<i>TSS</i>	<i>Chloride</i>	<i>Sulfate</i>	<i>Hardness</i>	<i>Comments</i>
W-7462-2999-JG-PZ2	PZ-2	02/09/99	1425	X					X	X	X		
W-7462-2999-JG-PZ10	PZ-2	02/09/99	1445	X					X	X	X		Duplicate of W-7462-2999-JG-PZ2
W-7462-21199-JG-PZ2	PZ-2	02/11/99	1400			X							
W-7462-21299-JG-PZ2	PZ-2	02/12/99	1210				X						
W-7462-21299-JG-PZ10	PZ-2	02/12/99	1220			X	X						Duplicate of W-7462-21599-JG-PZ2
W-7462-21599-JG-PZ2	PZ-2	02/15/99	1030					X					
W-7462-21599-JG-PZ10	PZ-2	02/15/99	1040					X					
W-7462-21099-JG-PZ-2	PZ-2	02/10/99	1400		X								
W-7462-21099-JG-PZ-10	PZ-2	02/10/99	1425		X								Duplicate of W-7462-21099-JG-PZ-2
W-7462-2999-JG-PZ3	PZ-3	02/09/99	1455	X					X	X	X		
W-7462-21199-JG-PZ3	PZ-3	02/11/99	1345			X							
W-7462-21299-JG-PZ3	PZ-3	02/12/99	1200				X	X					
W-7462-21099-JG-PZ-3	PZ-3	02/10/99	1350		X								
W-7462-2999-JG-PZ4	PZ-4	02/09/99	1405	X					X	X	X		
W-7462-21199-JG-PZ4	PZ-4	02/11/99	1330			X							
W-7462-21299-JG-PZ4	PZ-4	02/12/99	1150				X						
W-7462-21599-JG-PZ4	PZ-4	02/15/99	1020					X					
W-7462-21099-JG-PZ-4	PZ-4	02/10/99	1335		X								
W-7462-2999-JG-PZ5	PZ-5	02/09/99	1345	X					X	X	X		
W-7462-21199-JG-PZ5	PZ-5	02/11/99	1315			X	X						
W-7462-21299-JG-PZ5	PZ-5	02/12/99	1140					X					
W-7462-21099-JG-PZ-5	PZ-5	02/10/99	1320		X								
W-7462-2999-JG-PZ6	PZ-6	02/09/99	1120	X									
W-7462-21199-JG-PZ6	PZ-6	02/11/99	1020			X							
W-7462-21299-JG-PZ6	PZ-6	02/12/99	1030				X	X					
W-7462-21099-JG-PZ-6	PZ-6	02/10/99	1015		X				X	X	X		
W-7462-2999-JG-PZ7	PZ-7	02/09/99	1200	X					X	X	X		

TABLE 1C
SAMPLE COLLECTION AND ANALYSIS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

<i>Sample ID</i>	<i>Location</i>	<i>Date</i>	<i>Time</i>	<i>TCL VOCs</i>	<i>TCL SVOCs</i>	<i>HCb</i>	<i>TAL Metals (total)</i>	<i>TAL Metals (dissolved)</i>	<i>TSS</i>	<i>Chloride</i>	<i>Sulfate</i>	<i>Hardness</i>	<i>Comments</i>
W-7462-21299-JG-PZ7	PZ-7	02/12/99	1010			X	X						
W-7462-21599-JG-PZ7	PZ-7	02/15/99	0945					X					
W-7462-21099-JG-PZ-7	PZ-7	02/10/99	1035		X								
W-7462-2999-JG-PZ8	PZ-8	02/09/99	1100	X					X	X	X		
W-7462-21199-JG-PZ8	PZ-8	02/11/99	1125			X							
W-7462-21299-JG-PZ8	PZ-8	02/12/99	1045				X	X					
W-7462-21099-JG-PZ-8	PZ-8	02/10/99	1500		X								
W-7462-2999-JG-PZ9	PZ-9	02/09/99	1325	X					X	X	X		
W-7462-21199-JG-PZ9	PZ-9	02/11/99	1300				X						
W-7462-21299-JG-PZ9	PZ-9	02/12/99	1130			X		X					
W-7462-21099-JG-PZ-9	PZ-9	02/10/99	1305	X	X								

Notes:

- Not Applicable.

HCb Hexachlorobenzene.

MS Matrix Spike.

MSD Matrix Spike Duplicate.

SVOCs Semi-Volatile Organic Compounds (includes 1,2-Diphenylhydrazine).

TAL Target Analyte List.

TCL Target Compound List.

TSS Total Suspended Solids.

VOCs Volatile Organic Compounds.

TABLE 2
ANALYTICAL METHOD SUMMARY
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

<i>Sampling Activity</i>	<i>Analytical Parameters</i>	<i>Analytical Method</i>
<i>Groundwater Analysis</i>		
	TCL VOCs plus TICs	8260 (1)
	Hexachlorobenzene	8081A (1)
	TCL SVOCs plus TICs	8270 (1)
	TAL Metals, total and dissolved (except mercury)	6010A (1)
	Mercury, total and dissolved	7470A (1)
	TSS	160.2 (2)
	Hardness	130.2 (2)
	TOC	9060 (1)
	Chloride	EPA 325.2 (2)
	Sulfate	EPA 375.2/375.4 (2)
<i>Soil Characterization</i>		
	TCL VOCs plus TICs	8260 (1)
	TCL SVOCs and Hexachlorobenzene plus TICs	8270 (1)
	TAL Metals, total (except mercury)	6010A (1)
	Mercury	7471A (1)
	TOC	Lloyd Kahn (3)
	Ammonia	350.1 (2)
	Sulfide	9030A (1)
	Grain Size	ASTM 0422-63/0421-58 (4)

Notes:

- | | |
|-------|---|
| (1) | Referenced from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, November 1986 (with all subsequent revisions). |
| (2) | Referenced from "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983. |
| (3) | Referenced from "Determination of Total Organic Carbon in Sediment", prepared by Lloyd Kahn of the USEPA-Region II, July 1988. |
| (4) | Referenced from the Annual Book of ASTM Standards. |
| SVOCs | Semi-Volatile Organic Compounds. |
| TAL | Target Analyte List. |
| TCL | Target Compound List. |
| TOC | Total Organic Carbon. |
| TSS | Total Suspended Solids. |
| VOCs | Volatile Organic Compounds. |

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (a)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-8	A-11A	A-12	A-13	A-14	A-15	A-16	A-17
Sample Date:	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/01/1998
Parameters	Units							
TCL Volatiles								
Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	1
Acetone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	6
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	ND 10	ND 10	ND 10	ND 10	9 J	ND 10	ND 10
Dibromochloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	9 J	ND 10	4
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	ND 3	ND 3	ND 3	ND 3	ND 3	ND 3	ND 3
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
TCL Semi-volatiles								
Phenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (b)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-8	A-11A	A-12	A-13	A-14	A-15	A-16	A-17
Sample Date:	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/01/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Naphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (c)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-8	A-11A	A-12	A-13	A-14	A-15	A-16	A-17
Sample Date:	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/01/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	2 B
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1

Hexachlorobenzene	ug/L	ND 0.025	ND 0.025 L	ND 0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025 J
-------------------	------	----------	------------	----------	----------	----------	----------	------------

TAL Metals

Aluminum	ug/L	100	16 B	ND 5.4	--	--	--	18 B
Aluminum, dissolved	ug/L	ND 5.4	ND 5.4	ND 5.4	--	--	--	ND 5.4
Antimony	ug/L	ND 3.1	ND 3.1	ND 3.1	--	--	--	ND 3.1
Antimony, dissolved	ug/L	ND 3.1	ND 3.1	ND 3.1	--	--	--	ND 3.1
Arsenic	ug/L	ND 1.4 L	ND 1.4 L	ND 1.4 L	--	--	--	ND 1.4 L
Arsenic, dissolved	ug/L	ND 1.4	ND 1.4	1.9	--	--	--	ND 1.4
Barium	ug/L	16	21	78	--	--	--	290
Barium, dissolved	ug/L	14	21	72	--	--	--	280
Beryllium	ug/L	ND 0.20	0.20	ND 0.20	--	--	--	ND 0.20
Beryllium, dissolved	ug/L	ND 0.20	ND 0.20	ND 0.20	--	--	--	ND 0.20
Cadmium	ug/L	0.46 B	0.77 B	0.30 B	--	--	--	ND 0.30
Cadmium, dissolved	ug/L	ND 0.30	0.34	ND 0.30	--	--	--	ND 0.30
Calcium	ug/L	37000	120000	51000	--	--	--	40000
Calcium, dissolved	ug/L	35000	120000	48000	--	--	--	38000
Chromium	ug/L	ND 0.60	ND 0.60	ND 0.60	--	--	--	ND 0.60

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (d)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-8	A-11A	A-12	A-13	A-14	A-15	A-16	A-17
Sample Date:	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/01/1998

Parameters Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	ND 0.60	ND 0.60	ND 0.60	--	--	--	ND 0.60
Cobalt	ug/L	ND 2.0	39	40	--	--	--	ND 2.0
Cobalt, dissolved	ug/L	ND 2.0	39	38	--	--	--	ND 2.0
Copper	ug/L	17	3.6 B	3.5 B	--	--	--	4.4 B
Copper, dissolved	ug/L	16	ND 1.5	ND 1.5	--	--	--	ND 1.5
Iron	ug/L	320	18	17000	--	--	--	25000
Iron, dissolved	ug/L	150	ND 7.0	15000	--	--	--	24000
Lead	ug/L	16	2.1	4.6	--	--	--	3.2 B
Lead, dissolved	ug/L	2.6 L	ND 0.90 L	1.4 L	--	--	--	0.97 L
Magnesium	ug/L	12000	100000	44000	--	--	--	9500
Magnesium, dissolved	ug/L	11000	97000	42000	--	--	--	9100
Manganese	ug/L	180	12000	11000	--	--	--	130
Manganese, dissolved	ug/L	100	12000	11000	--	--	--	120
Mercury	ug/L	ND 0.10	0.15	ND 0.10	--	--	--	ND 0.10
Mercury, dissolved	ug/L	ND 0.10	ND 0.10	ND 0.10	--	--	--	ND 0.10
Nickel	ug/L	7.1	11	4.0	--	--	--	ND 2.8
Nickel, dissolved	ug/L	7.3	10	3.7	--	--	--	ND 2.8
Potassium	ug/L	11000	15000	20000	--	--	--	6500
Potassium, dissolved	ug/L	10000	16000	20000	--	--	--	6300
Selenium	ug/L	ND 2.0 L	8.1 L	3.3 L	--	--	--	ND 2.0 L
Selenium, dissolved	ug/L	2.2	9.5 K	2.3 L	--	--	--	2.3
Silver	ug/L	ND 0.60	2.4	2.4	--	--	--	ND 0.60
Silver, dissolved	ug/L	1.7	3.1 B	2.2 B	--	--	--	ND 0.60
Sodium	ug/L	48000 J	230000 J	87000 J	--	--	--	100000 J
Sodium, dissolved	ug/L	46000	230000	86000	--	--	--	97000
Thallium	ug/L	ND 1.8	ND 1.8	ND 1.8	--	--	--	ND 1.8
Thallium, dissolved	ug/L	ND 1.8	ND 1.8	ND 1.8	--	--	--	ND 1.8
Vanadium	ug/L	2.7	ND 1.8	ND 1.8	--	--	--	ND 1.8
Vanadium, dissolved	ug/L	ND 1.8	ND 1.8	ND 1.8	--	--	--	ND 1.8
Zinc	ug/L	380	100	56	--	--	--	410
Zinc, dissolved	ug/L	420	97	48	--	--	--	41

General Chemistry

Chloride	mg/L	51	560	110	--	--	--	260
Sulfate	mg/L	120	730	300	--	--	--	25
Total suspended solids	mg/L	4.4	ND 4	4.4	--	--	--	12
Total hardness	mg/L	--	--	--	--	--	--	--

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (a)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-18	A-20	A-23	A-24	A-25D	A-25S	A-26D	A-26OB
Sample Date:	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/01/1998	12/01/1998

Parameters Units

TCL Volatiles

Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	3 B
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	ND 10	ND 10	ND 10	ND 10	5 J	4 K	ND 10	ND 10
Acetone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	8 J	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	7 K	ND 10	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	8 K	ND 10	ND 10
Benzene	ug/L	ND 10	9 J	2 J	ND 10	27	55000	ND 10	ND 10
Dibromochloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
2-Hexanone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10 J	ND 25000	ND 10	ND 10
Tetrachloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
Toluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
Chlorobenzene	ug/L	ND 3	130	ND 3	ND 3	210	110000	ND 3	ND 3
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 25000	ND 10	ND 10

TCL Semi-volatiles

Phenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	19 J	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 5	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	11 J	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	ND 10	4 J	ND 10	ND 10	170 J	540 J	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (b)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-18	A-20	A-23	A-24	A-25D	A-25S	A-26D	A-26OB
Sample Date:	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/01/1998	12/01/1998

Parameters

Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	42	ND 10	ND 10	2500	9900	ND 10	ND 10
1,2-Dichlorobenzene	ug/L	ND 10	36	ND 10	ND 10	2000	6500	ND 10	ND 10
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10	22	ND 10	ND 10	150 J	130	ND 10	ND 10
Naphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10 J	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25 J	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (c)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-18	A-20	A-23	A-24	A-25D	A-25S	A-26D	A-26OB
Sample Date:	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/01/1998	12/01/1998

Parameters **Units**

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 120	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	ND 10	ND 10	ND 10	1 B	ND 10	ND 50	4 B	ND 10
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 5	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 5	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 50	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1 J	ND 1 J	ND 1	ND 1	ND 1	ND 5	ND 1	ND 1
Hexachlorobenzene	ug/L	ND 0.025	ND 0.025	ND 0.025 L	ND 0.025	0.058	ND 0.025	ND 0.025	ND 0.025

TAL Metals

Aluminum	ug/L	44 B	28 B	-	-	3700	100 B	23 B	550 J
Aluminum, dissolved	ug/L	ND 18	ND 18	-	-	26 B	ND 19	ND 5.4	ND 5.4
Antimony	ug/L	ND 3.1	ND 3.1	-	-	ND 2.9	ND 2.9	ND 3.1	ND 3.1
Antimony, dissolved	ug/L	ND 2.9	5.2	-	-	ND 3.0	ND 3.0	ND 3.1	ND 3.1
Arsenic	ug/L	ND 1.4	11 L	-	-	6.4 K	6.4 K	ND 1.4 L	ND 1.4 L
Arsenic, dissolved	ug/L	3.5	12	-	-	2.8 B	6.4 B	4.6 B	ND 1.4
Barium	ug/L	19	380	-	-	37	24	14	170
Barium, dissolved	ug/L	19	370	-	-	27	24	15	160
Beryllium	ug/L	0.27 B	ND 0.20	-	-	ND 0.20	ND 0.20	ND 0.20	ND 0.20
Beryllium, dissolved	ug/L	ND 0.20	ND 0.20	-	-	ND 0.21	ND 0.21	0.23	ND 0.20
Cadmium	ug/L	ND 0.30	ND 0.30	-	-	3.2	ND 0.20	0.69 B	ND 0.30
Cadmium, dissolved	ug/L	0.42	ND 0.20	-	-	3.3	ND 0.21	0.49	ND 0.30
Calcium	ug/L	110000	40000	-	-	130000 J	41000 J	140000	150000
Calcium, dissolved	ug/L	110000	41000	-	-	130000 J	41000 J	140000	140000
Chromium	ug/L	1.2	ND 0.60	-	-	120	2.0	ND 0.60	1.7

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (d)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-18	A-20	A-23	A-24	A-25D	A-25S	A-26D	A-26OB
Sample Date:	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/01/1998	12/01/1998

Parameters Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	1.5	ND 0.70	--	--	6.9	1.4 B	ND 0.60	ND 0.60
Cobalt	ug/L	ND 2.0	ND 2.0	--	--	1100	14	10	6.4
Cobalt, dissolved	ug/L	ND 1.9	ND 1.9	--	--	1100	13	11	4.5
Copper	ug/L	ND 1.5	ND 1.5	--	--	4.8	ND 1.0	2.6 B	5.8 B
Copper, dissolved	ug/L	ND 1.0	ND 1.0	--	--	ND 1.0	ND 1.0	ND 1.5	ND 1.5
Iron	ug/L	70	75000	--	--	7300	12000	22 B	55000
Iron, dissolved	ug/L	21	65000	--	--	1900 J	12000 J	9.4 B	48000
Lead	ug/L	1.1	4.2	--	--	8.4	2.4 K	ND 0.90	14 B
Lead, dissolved	ug/L	1.0 K	ND 1.0	--	--	7.2	1.8 B	ND 0.90 L	1.6 L
Magnesium	ug/L	88000	14000	--	--	120000 J	24000 J	81000	56000
Magnesium, dissolved	ug/L	94000	14000	--	--	120000 J	24000 J	86000	52000
Manganese	ug/L	97	550	--	--	69000 J	8800 J	1100	9400
Manganese, dissolved	ug/L	96	540	--	--	70000 J	8700 J	1100	8800
Mercury	ug/L	0.37	ND 0.10	--	--	19	1.4	0.35	ND 0.10
Mercury, dissolved	ug/L	0.12	0.14	--	--	7.7 L	0.18 L	0.10	ND 0.10
Nickel	ug/L	9.9	ND 2.8	--	--	240	2.5	16	ND 2.8
Nickel, dissolved	ug/L	12	ND 1.5	--	--	150	ND 1.5	17	ND 2.8
Potassium	ug/L	25000	4300	--	--	36000	40000	28000	110000
Potassium, dissolved	ug/L	25000	4600	--	--	39000	42000	29000	100000
Selenium	ug/L	9.4 B	2.3 B	--	--	24	ND 2.4	ND 2.0 L	2.2 L
Selenium, dissolved	ug/L	5.7	ND 2.4	--	--	24	3.9	4.6	3.3 K
Silver	ug/L	ND 0.60	4.2	--	--	ND 0.60	ND 0.60	ND 0.60	1.1
Silver, dissolved	ug/L	ND 0.60	ND 0.60	--	--	ND 0.61	ND 0.61	1.2 B	1.9 B
Sodium	ug/L	440000	21000	--	--	480000	500000	650000 J	220000 J
Sodium, dissolved	ug/L	440000	22000	--	--	590000	590000	730000	200000
Thallium	ug/L	ND 1.8	ND 1.8	--	--	77	14 B	2.9 B	ND 1.8
Thallium, dissolved	ug/L	3.0 B	4.2	--	--	76	13 B	ND 1.8	ND 1.8
Vanadium	ug/L	ND 1.8	ND 1.8	--	--	7.6	ND 2.1	ND 1.8	ND 1.8
Vanadium, dissolved	ug/L	ND 2.1	ND 2.1	--	--	ND 2.1	ND 2.1	ND 1.8	ND 1.8
Zinc	ug/L	78	19 B	--	--	48 B	5.0 B	66 B	130
Zinc, dissolved	ug/L	85	13	--	--	37 B	5.7 B	67	120

General Chemistry

Chloride	mg/L	1200	150	--	--	430	910	1200	450
Sulfate	mg/L	470	ND 1.0	--	--	1700	320	830	220
Total suspended solids	mg/L	ND 4	7.6	--	--	50	12	4	61
Total hardness	mg/L	--	--	--	--	--	--	--	--

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (a)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:		A-26S	A-27D	A-27S	A-29D	A-29OB	A-29S	A-29S	A-30D
Sample Date:		12/01/1998	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998
Parameters	Units							Dupl.	
TCL Volatiles									
Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	ND 10	ND 10	ND 10	ND 10	2 B	2 B	ND 10	ND 10
Acetone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	ND 10	25	9 J	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	41	97	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	7 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Dibromochloromethane	ug/L	ND 10	9 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10	17	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	ug/L	ND 10	20	3 J	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	ND 3	ND 3	ND 3	ND 3	ND 3	ND 3	ND 3	ND 3
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
TCL Semi-volatiles									
Phenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (b)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location: A-26S A-27D A-27S A-29D A-29OB A-29S A-29S A-30D
Sample Date: 12/01/1998 12/03/1998 12/03/1998 12/02/1998 12/02/1998 12/02/1998 12/02/1998 12/03/1998
Dupl.

Parameters

Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichlorobenzene	ug/L	ND 10	ND 10	2 B	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10	ND 10	1 J	ND 10	ND 10	ND 10	ND 10	ND 10
Naphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (c)
Date Printed: May 12, 1999
Time Printed: 2:21 pm

Sample Location:	A-26S	A-27D	A-27S	A-29D	A-29OB	A-29S	A-29S	A-30D
Sample Date:	12/01/1998	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998

Parameters

Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	2 B	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	ND 10	ND 10	ND 10	2 B	2 B	ND 10	ND 10	ND 10
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1 J	ND 1 J	ND 1	ND 1	ND 1	ND 1	ND 1 J
Hexachlorobenzene	ug/L	ND 0.025 J	ND 0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025 J	ND 0.025 L	ND 0.025

TAL Metals

Aluminum	ug/L	10 B	53 B	200	190	250	280	320	ND 54
Aluminum, dissolved	ug/L	ND 5.4	ND 5.4	29 B	ND 5.4	ND 5.4	ND 54	ND 54	ND 18
Antimony	ug/L	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 31	ND 31	ND 3.1
Antimony, dissolved	ug/L	ND 3.1	ND 3.1	ND 2.9	ND 3.1	ND 3.1	ND 31	ND 31	13
Arsenic	ug/L	ND 1.4 L	ND 1.4 L	3.2 L	ND 1.4 L	ND 1.4 L	ND 14 L	ND 14 L	ND 1.4
Arsenic, dissolved	ug/L	ND 1.4	ND 1.4	7.8	ND 1.4	ND 1.4	ND 14	ND 14	4.1
Barium	ug/L	24	110	38	120	120	540	560	980
Barium, dissolved	ug/L	22	110	38	78	110	500	500	900
Beryllium	ug/L	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 2.0	ND 2.0	0.32
Beryllium, dissolved	ug/L	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 2.0	ND 2.0	ND 0.20
Cadmium	ug/L	0.53 B	0.57 B	ND 0.30	ND 0.30	ND 0.30	ND 3.0	ND 3.0	ND 3.0
Cadmium, dissolved	ug/L	ND 0.30	ND 0.30	ND 0.20	ND 0.30	ND 0.30	ND 3.0	ND 3.0	ND 0.20
Calcium	ug/L	46000	43000	6500	70000	180000	160000	150000	380000
Calcium, dissolved	ug/L	43000	43000	6200	65000	170000	150000	150000	370000
Chromium	ug/L	ND 0.60	16	15	ND 0.60	12	ND 6.0	ND 6.0	ND 0.60

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-26S	A-27D	A-27S	A-29D	A-29OB	A-29S	A-29S	A-30D
Sample Date:	12/01/1998	12/03/1998	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998

Parameters	Units							
------------	-------	--	--	--	--	--	--	--

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	ND 0.60	17	14	ND 0.60	2.8	18		ND 0.70
Cobalt	ug/L	9.1	ND 2.0	ND 2.0	ND 2.0	65	350	330	ND 2.0
Cobalt, dissolved	ug/L	7.7	ND 2.0	ND 1.9	3.2	62	300	320	ND 1.9
Copper	ug/L	2.0 B	5.0 B	ND 1.5	4.1 B	4.7 B	ND 15	ND 15	ND 1.5
Copper, dissolved	ug/L	ND 1.5	1.9	ND 1.0	1.6	8.3	ND 15	ND 15	7.7
Iron	ug/L	1200	110	340	17000	150000	160000	160000	360000
Iron, dissolved	ug/L	1100	14 B	7.5	13000	140000	150000	150000	310000
Lead	ug/L	ND 0.90	ND 0.90	0.97	2.6	9.6	26	21	ND 9.0
Lead, dissolved	ug/L	ND 0.90 L	ND 0.90 L	ND 1.0	ND 0.90 L	6.5	18	20	ND 1.0
Magnesium	ug/L	51000	23000	3200	110000	140000	180000	180000	190000
Magnesium, dissolved	ug/L	48000	24000	3300	99000	130000	160000	170000	190000
Manganese	ug/L	950	52	160	6.0	34000	150000	140000	2100
Manganese, dissolved	ug/L	840	41	140	1500	33000	140000	140000	2000
Mercury	ug/L	0.14	24	4.5	0.10	0.39	ND 0.10 J	0.88 J	0.47
Mercury, dissolved	ug/L	ND 0.10	1.1	26	ND 0.10	ND 0.10	ND 0.10 J	1.0 J	0.54
Nickel	ug/L	11	ND 2.8	ND 2.8	ND 2.8	25	79	ND 28	ND 2.8
Nickel, dissolved	ug/L	10	ND 2.8	ND 1.5	ND 2.8	13	70	58	ND 1.5
Potassium	ug/L	22000	62000	150000	47000	24000	7400	7800	39000
Potassium, dissolved	ug/L	21000	62000	150000	44000	22000	6600	6800	35000
Selenium	ug/L	7.5 L	ND 2.0 L	6.4 B	ND 2.0 L	ND 2.0 L	63	62	24
Selenium, dissolved	ug/L	11 K	3.4	2.4	2.0	11	49 K	58	ND 2.4
Silver	ug/L	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60	34	35	7.1
Silver, dissolved	ug/L	ND 0.60	0.94	0.97	0.64 B	6.2	22	31	ND 0.60
Sodium	ug/L	330000 J	1400000 J	490000	510000 J	550000 J	510000 J	520000 J	510000
Sodium, dissolved	ug/L	340000	1300000	470000	530000	560000	510000	520000	480000
Thallium	ug/L	2.4 B	2.2 B	3.2	ND 1.8	ND 1.8	ND 18	ND 18	ND 18
Thallium, dissolved	ug/L	ND 1.8	ND 1.8	5.0	ND 1.8	ND 1.8	48 J	31 J	5.1
Vanadium	ug/L	ND 1.8	ND 1.8	13	4.0	ND 1.8	ND 18	ND 18	ND 1.8
Vanadium, dissolved	ug/L	ND 1.8	ND 1.8	12	ND 1.8	ND 1.8	ND 18	ND 18	6.1
Zinc	ug/L	39 B	45 B	35 B	39	10 B	59	71	56
Zinc, dissolved	ug/L	37	37 B	35	40	9.1 B	97	73	2.7 B

General Chemistry

Chloride	mg/L	660	2500	880	690	1300	2000	1800	2600
Sulfate	mg/L	280	240	80	3.4	280	16	14	90
Total suspended solids	mg/L	ND 4	12	ND 4	67	210	130	160	14
Total hardness	mg/L	—	—	—	—	—	—	—	—

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (a)

Date Printed: May 12, 1999

Time Printed: 2:22 pm

Sample Location:	A-300B	A-31D	A-310B	A-32D	A-320B	A-32S	A-32S	A-33D
Sample Date:	12/02/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998
Parameters	Units						Dupl.	
TCL Volatiles								
Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	4
Acetone	ug/L	ND 10	ND 10	3 J	ND 10	ND 10	29 J	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	ND 10	ND 10	ND 10	ND 10	10 J	9 J	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	ND 10	ND 10	ND 10	ND 10	9 J	ND 10	ND 10
Dibromochloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	ND 3	ND 3	29	ND 3	34	ND 3	ND 3
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
TCL Semi-volatiles								
Phenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	12	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (b)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-300B	A-31D	A-310B	A-32D	A-320B	A-32S	A-32S	A-33D
Sample Date:	12/02/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	ND 10	1 B	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	2 J	4 J	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Naphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (c)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-300B	A-31D	A-310B	A-32D	A-320B	A-32S	A-32S	A-33D
Sample Date:	12/02/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998
							Dupl.	

Parameters Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	2 B	ND 10	ND 10
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1 J	ND 1 J	ND 1 J	ND 1 J	ND 1 J	ND 1	ND 1
Hexachlorobenzene	ug/L	ND 0.025	ND 0.025	ND 0.025 L	ND 0.025 L	ND 0.025	ND 0.025 J	ND 0.025 L	ND 0.025

TAL Metals

Aluminum	ug/L	400	340	11000	18000	530	8900	13000	430
Aluminum, dissolved	ug/L	27 B	19 B	9900	18 B	29 B	49 B	51 B	20 B
Antimony	ug/L	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 2.9
Antimony, dissolved	ug/L	ND 2.9	ND 2.9	ND 2.9	4.1	ND 2.9	ND 2.9	3.3	ND 3.0
Arsenic	ug/L	9.0 L	ND 1.4	ND 1.4 L	3.6	18 L	10 L	9.0 L	3.8 K
Arsenic, dissolved	ug/L	9.3	3.1	4.4	1.7	21	5.5	6.0	2.9 B
Barium	ug/L	320	120	51	140	410	150	160	31
Barium, dissolved	ug/L	300	110	49	62	390	140	130	30
Beryllium	ug/L	0.37	ND 0.20	1.4 L	1.0 B	0.34 B	0.75 B	0.70 B	ND 0.20
Beryllium, dissolved	ug/L	ND 0.20	ND 0.20	1.1	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.21
Cadmium	ug/L	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30	0.40
Cadmium, dissolved	ug/L	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	0.43
Calcium	ug/L	63000	21000	58000	56000	94000	55000	57000	85000 J
Calcium, dissolved	ug/L	67000	20000	58000	59000	93000	59000	60000	85000 J
Chromium	ug/L	1.5	2.4	2.4	40	17	100	88	1.2

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-300B	A-31D	A-310B	A-32D	A-320B	A-32S	A-32S	A-33D
Sample Date:	12/02/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998	12/03/1998
							Dupl.	

Parameters Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	1.4	ND 0.70	2.1	2.2	8.2	8.1	9.6	0.81 B
Cobalt	ug/L	5.5	ND 2.0	20	9.6	11	22	18	6.3
Cobalt, dissolved	ug/L	5.2	ND 1.9	21	ND 1.9	8.0	18 J	34 J	6.1
Copper	ug/L	3.4 B	ND 1.5	3.1	10	9.0	15	18	ND 1.0
Copper, dissolved	ug/L	24	ND 1.0	3.9	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Iron	ug/L	3500	18000	70000	39000	42000	31000	29000	900
Iron, dissolved	ug/L	300	15000	67000	16000	38000	22000	22000	19 B
Lead	ug/L	2.1 B	1.3	8.8	7.7	4.6	12	14	1.4 K
Lead, dissolved	ug/L	1.6 K	ND 1.0	6.6	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Magnesium	ug/L	130000	7500	91000	100000	180000	93000	93000	120000 J
Magnesium, dissolved	ug/L	150000	7400	100000	110000	190000	110000	120000	120000 J
Manganese	ug/L	1400	260	6900	2400	1400	1300	1300	210 J
Manganese, dissolved	ug/L	1500	250	7100	2400	1400	1600	1600	190 J
Mercury	ug/L	0.45	ND 0.10	ND 0.10	0.21	0.44	0.75 J	1.1 J	ND 0.10
Mercury, dissolved	ug/L	0.44	ND 0.10	0.14	ND 0.10	0.28	ND 0.10	ND 0.10	0.23 L
Nickel	ug/L	4.3	ND 2.8	19	19	8.6	140 J	93 J	13
Nickel, dissolved	ug/L	10	ND 1.5	23	1.8	5.6	19 J	50 J	12
Potassium	ug/L	210000	22000	54000	51000	180000	100000	110000	44000
Potassium, dissolved	ug/L	240000	24000	49000	51000	170000	98000	98000	45000
Selenium	ug/L	6.6 B	4.5 B	3.0 B	7.1 B	4.3 B	3.7 B	6.1 B	ND 2.4
Selenium, dissolved	ug/L	ND 2.4	ND 2.4	ND 2.4	ND 2.4	ND 2.4	ND 2.4	ND 2.4	ND 2.5
Silver	ug/L	1.9	ND 0.60	4.7	1.8	2.0	1.8	1.6	ND 0.60
Silver, dissolved	ug/L	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.61
Sodium	ug/L	3600000	25000	2000000	210000	1800000	440000	480000	730000
Sodium, dissolved	ug/L	3100000	29000	1900000	230000	1700000	440000	430000	770000
Thallium	ug/L	ND 1.8	ND 1.8	ND 1.8	ND 1.8	ND 1.8	ND 1.8	ND 1.8	7.9 B
Thallium, dissolved	ug/L	5.2	ND 1.9	14	4.0 B	5.6 B	4.4 B	3.7 B	6.2 B
Vanadium	ug/L	2.8	3.8	ND 1.8	34	6.1	43	41	ND 2.1
Vanadium, dissolved	ug/L	ND 2.1	ND 2.1	ND 2.1	ND 2.1	5.9	6.6	6.8	ND 2.1
Zinc	ug/L	660	42 B	260	94	22 B	99	110	64
Zinc, dissolved	ug/L	460	24	250	25	21	28	36	61 B

General Chemistry

Chloride	mg/L	5600	59	3300	370	2900	470	600	1700
Sulfate	mg/L	140	ND 1.0	900	5.8	39	58	60	400
Total suspended solids	mg/L	12	ND 4	10	1600	99	280	210	25
Total hardness	mg/L	--	--	--	--	--	--	--	--

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (a)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-33S	A-34D	A-34S	A-35D	A-35S	A-36D	A-36S	A-37D
Sample Date:	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/04/1998

Parameters Units

TCL Volatiles

Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	11 K
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	4 J	ND 10	ND 10	ND 10	2 B	ND 10	ND 10	ND 10
Acetone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10	ND 10	ND 10	ND 10	8 J	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	ND 10	7 J	9 J	ND 10	9 J	ND 10	14	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	18 K
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	70	330	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	3 J	30 J	ND 10	ND 10	ND 10
Benzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	1100
Dibromochloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Tetrachloroethene	ug/L	ND 10	10	18	5 J	56 J	ND 10	38	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	ND 3	4	ND 3	ND 3	ND 3	ND 3	ND 3	4300
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TCL Semi-volatiles

Phenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	32
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	51
1,3-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	75

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (b)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

<i>Sample Location:</i>	A-33S	A-34D	A-34S	A-35D	A-35S	A-36D	A-36S	A-37D
<i>Sample Date:</i>	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/04/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	1100
1,2-Dichlorobenzene	ug/L	ND 10	3 J	ND 10	ND 10	ND 10	ND 10	ND 10	650
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	2 J	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	2 J
1,2,4-Trichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	42
Naphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	5 J
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (c)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-33S	A-34D	A-34S	A-35D	A-35S	A-36D	A-36S	A-37D
Sample Date:	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/04/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	2 B	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1 J	ND 1 J	ND 1
Hexachlorobenzene	ug/L	ND 0.025	ND 0.025 J	0.041 J	ND 0.025	ND 0.025 J	ND 0.025	0.56	ND 0.025

TAL Metals

Aluminum	ug/L	ND 18	2900 J	2200 J	7300 J	480 J	990 J	1300 J	3600
Aluminum, dissolved	ug/L	ND 19	2300	1800	7100	210	150	830	ND 19
Antimony	ug/L	ND 2.9	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 3.1	ND 2.9
Antimony, dissolved	ug/L	ND 3.0	ND 3.1	ND 3.1	3.4	ND 3.1	ND 3.1	ND 3.1	ND 3.0
Arsenic	ug/L	2.6 K	24	17	2.0 L	ND 1.4 L	3.5 L	ND 1.4 L	10 K
Arsenic, dissolved	ug/L	5.7 B	29	19	8.1	2.1	2.7	2.2	5.8 B
Barium	ug/L	300	22	12	3.1	110	43	94	290
Barium, dissolved	ug/L	290	4.6	8.2	1.6	120	49	84	290
Beryllium	ug/L	ND 0.20	0.21	ND 0.20	ND 0.20	1.4	ND 0.20	ND 0.20	ND 0.20
Beryllium, dissolved	ug/L	ND 0.21	0.23	ND 0.20	ND 0.20	1.1	ND 0.20	ND 0.20	ND 0.21
Cadmium	ug/L	ND 0.20	0.43 B	0.48 B	0.30 B	3.7	ND 0.30	0.45 B	ND 0.20
Cadmium, dissolved	ug/L	ND 0.21	ND 0.30	ND 0.30	ND 0.30	0.71	ND 0.30	ND 0.30	ND 0.21
Calcium	ug/L	80000 J	1300	2500	1600	47000	30000	16000	58000 J
Calcium, dissolved	ug/L	80000 J	1100	2400	1500	46000	38000	15000	58000 J
Chromium	ug/L	ND 0.70	70 J	74 J	20	32 J	ND 0.60	7.3	18

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-33S	A-34D	A-34S	A-35D	A-35S	A-36D	A-36S	A-37D
Sample Date:	12/03/1998	12/02/1998	12/02/1998	12/02/1998	12/02/1998	12/03/1998	12/03/1998	12/04/1998

Parameters

Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	0.85 B	67	71	21	28	ND 0.60	6.4	1.0 B
Cobalt	ug/L	9.9	2.2	ND 2.0	ND 2.0	110	2.8	ND 2.0	18
Cobalt, dissolved	ug/L	9.7	ND 2.0	ND 2.0	ND 2.0	82	2.4	ND 2.0	12
Copper	ug/L	ND 1.0	6.8 B	3.6 B	3.9 B	5.9 B	2.4 B	2.9 B	9.9
Copper, dissolved	ug/L	ND 1.0	4.8	ND 1.5	3.3	2.1	7.5	4.4	ND 1.0
Iron	ug/L	33000	580	130	120	540	600	76	57000
Iron, dissolved	ug/L	32000 J	13	ND 7.0	ND 7.0	82	29	79 B	51000 J
Lead	ug/L	1.5 K	3.6	ND 0.90	1.5	5.0	1.3	3.4	4.8 B
Lead, dissolved	ug/L	ND 1.0	ND 0.90 L	ND 0.90 L	ND 0.90 L	4.2 L	ND 0.90 L	ND 0.90 L	ND 1.0
Magnesium	ug/L	69000 J	43	37	110	24000	11000	7300	26000 J
Magnesium, dissolved	ug/L	69000 J	16 B	17 B	91	24000	15000	6900	25000 J
Manganese	ug/L	3200 J	110	17	7.0	5600	170	25	1700 J
Manganese, dissolved	ug/L	3100 J	2.7	0.79	ND 0.60	4900	180	21	1300 J
Mercury	ug/L	ND 0.10	590	280	110	45	ND 0.10	0.20	0.29
Mercury, dissolved	ug/L	0.20 L	560	270	96	32	ND 0.10	0.13	ND 0.10 L
Nickel	ug/L	13	4.9	ND 2.8	ND 2.8	100	ND 2.8	ND 2.8	18
Nickel, dissolved	ug/L	13	ND 2.8	ND 2.8	ND 2.8	27	3.1	ND 2.8	12 B
Potassium	ug/L	21000	390000	550000	240000	840000	57000	52000	8800
Potassium, dissolved	ug/L	22000	390000	480000	240000	970000	34000	48000	7700
Selenium	ug/L	4.3	11	16	26	ND 2.0 L	11	ND 2.0 L	4.0
Selenium, dissolved	ug/L	4.6	17	21	28	7.1	15	2.3	2.7
Silver	ug/L	ND 0.60	0.84	1.7	ND 0.60	0.82	ND 0.60	ND 0.60	ND 0.60
Silver, dissolved	ug/L	ND 0.61	2.4 B	2.6 B	0.68 B	1.8 B	ND 0.60	0.70	ND 0.61
Sodium	ug/L	350000	3700000 J	4000000 J	520000 J	270000 J	190000 J	130000 J	150000
Sodium, dissolved	ug/L	360000	3500000	4100000	520000	310000	180000	120000	150000
Thallium	ug/L	8.7 B	2.5 B	2.3 B	3.0 B	ND 1.8	ND 1.8	ND 1.8	7.2 K
Thallium, dissolved	ug/L	10 B	1.9	ND 1.8	ND 1.8	ND 1.8	ND 1.8	ND 1.8	5.3 B
Vanadium	ug/L	ND 2.1	170	110	27	ND 1.8	69	20	33
Vanadium, dissolved	ug/L	ND 2.1	170	110	26	ND 1.8	30	17	ND 2.1
Zinc	ug/L	55 B	24	24	8.5 B	140	25 B	20 B	39 L
Zinc, dissolved	ug/L	52	16 B	13 B	21 B	190	23 B	12 B	22 B

General Chemistry

Chloride	mg/L	870	5500	6200	450	1500	120	190	440
Sulfate	mg/L	270	850	920	740	74	280	33	32
Total suspended solids	mg/L	4.8	64	28	12	36	37	18	120
Total hardness	mg/L	—	—	—	—	—	—	—	—

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (a)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

<i>Sample Location:</i>	A-37S	A-38D	A-39D	A-39D	A-39S	A-6A	A-7A	B-5
<i>Sample Date:</i>	12/04/1998	12/04/1998	12/04/1998	12/04/1998	12/04/1998	12/02/1998	12/02/1998	12/01/1998
				Dupl.				

Parameters Units

TCL Volatiles

Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 25000	ND 10	ND 10	ND 10	130	ND 10	ND 10	ND 10
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	4 B	2 B	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acetone	ug/L	9 J	ND 10	ND 10 J	ND 10 J	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	38 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	18	14	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	53 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	ug/L	31 J	ND 10	ND 10	ND 10	12	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	34 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	12 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	78000	160 K	4 J	ND 10	430	ND 10	ND 10	ND 10
Dibromochloromethane	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 25000	ND 10 J	ND 10 J	ND 10 J	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	ug/L	ND 25000	1 K	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1,2-Tetrachloroethane	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	280000	840 K	160 J	98 J	510	ND 3	ND 3	ND 3
Ethylbenzene	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 25000	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TCL Semi-volatiles

Phenol	ug/L	ND 500	ND 10	ND 10	ND 10	5 J	ND 10	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 50	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 500	ND 10	ND 10	ND 10	3 J	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	820	8 J	6 J	6 J	7 J	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (b)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-37S	A-38D	A-39D	A-39D	A-39S	A-6A	A-7A	B-5
Sample Date:	<u>12/04/1998</u>	<u>12/04/1998</u>	<u>12/04/1998</u>	<u>12/04/1998</u>	<u>12/04/1998</u>	<u>12/02/1998</u>	<u>12/02/1998</u>	<u>12/01/1998</u>
				Dupl.				

Parameters **Units**

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	15000	27	62	70	44	ND 10	ND 10	ND 10
1,2-Dichlorobenzene	ug/L	9400	ND 10	44	52	13 B	ND 10	ND 10	ND 10
2-Methylphenol	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 500 J	ND 10 J	ND 10 J	ND 10	ND 10 J	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	130 J	11	8 J	9 J	ND 10	ND 10	ND 10	ND 10
Naphthalene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 500	ND 10	ND 10	1 J	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 500 J	ND 10 J	ND 10 J	ND 10	ND 10 J	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (c)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	A-37S	A-38D	A-39D	A-39D	A-39S	A-6A	A-7A	B-5
Sample Date:	12/04/1998	12/04/1998	12/04/1998	12/04/1998	12/04/1998	12/02/1998	12/02/1998	12/01/1998
				Dupl.				

Parameters Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 1200	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 500	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	ND 500	ND 10	ND 10	ND 10	1 B	ND 10	ND 10	1 B
Di-n-octyl phthalate	ug/L	ND 500	R	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 500	R	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 500	R	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 500 J	R	ND 10 J	ND 10 J	ND 10 J	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 50	R	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 50	R	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 500	R	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 50	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Hexachlorobenzene	ug/L	ND 0.025 J	ND 0.025	0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025 L

TAL Metals

Aluminum	ug/L	430	18 B	330 B	380 B	59 B	--	--	22 B
Aluminum, dissolved	ug/L	200 B	30 B	38 B	44 B	ND 19	--	--	ND 5.4
Antimony	ug/L	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	--	--	ND 3.1
Antimony, dissolved	ug/L	ND 3.0	ND 3.0	ND 3.0	ND 3.0	ND 3.0	--	--	ND 3.1
Arsenic	ug/L	6.1 K	4.4 K	4.3 K	5.4 K	2.8 K	--	--	ND 1.4
Arsenic, dissolved	ug/L	6.6 B	4.7 B	6.2 B	3.6 B	2.0 B	--	--	ND 1.4
Barium	ug/L	29	71	24	24	25	--	--	39
Barium, dissolved	ug/L	28	72	23	24	24	--	--	37
Beryllium	ug/L	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	--	--	ND 0.20
Beryllium, dissolved	ug/L	ND 0.21	ND 0.21	ND 0.21	ND 0.21	ND 0.21	--	--	ND 0.20
Cadmium	ug/L	ND 0.20	ND 0.20	8.2	8.2	0.23	--	--	0.87 B
Cadmium, dissolved	ug/L	ND 0.21	ND 0.21	8.2	8.6	ND 0.21	--	--	0.50
Calcium	ug/L	37000 J	18000 J	150000 J	160000 J	23000 J	--	--	37000
Calcium, dissolved	ug/L	36000 J	19000 J	150000 J	160000 J	23000 J	--	--	36000
Chromium	ug/L	0.97 B	ND 0.70	30	32	1.6 B	--	--	ND 0.60

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location: A-37S A-38D A-39D A-39D A-39S A-6A A-7A B-5
Sample Date: 12/04/1998 12/04/1998 12/04/1998 12/04/1998 12/04/1998 12/02/1998 12/02/1998 12/01/1998
Dupl.

Parameters Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	1.3 B	0.72 B	6.4 B	7.2 B	1.7 B	--	ND 0.60
Cobalt	ug/L	ND 1.9	ND 1.9	690	690	7.4	--	28
Cobalt, dissolved	ug/L	2.2	ND 1.9	670	720	6.6	--	26
Copper	ug/L	4.4	ND 1.0	3.4	3.5	ND 1.0	--	5.3 B
Copper, dissolved	ug/L	3.8	ND 1.0	1.2	1.6	ND 1.0	--	3.2 B
Iron	ug/L	520	9100	48000	49000	590	--	2100
Iron, dissolved	ug/L	12 B	9200 J	48000 J	49000 J	410 B	--	31 B
Lead	ug/L	1.5 B	1.5 B	8.0 B	7.4 B	1.6 B	--	2.1 B
Lead, dissolved	ug/L	1.3 B	ND 1.0	7.6 B	7.1 B	ND 1.0	--	ND 0.90 L
Magnesium	ug/L	78000 J	5300 J	160000 J	160000 J	21000 J	--	41000
Magnesium, dissolved	ug/L	76000 J	5600 J	160000 J	160000 J	20000 J	--	39000
Manganese	ug/L	66 J	220 J	68000 J	67000 J	7900 J	--	5900
Manganese, dissolved	ug/L	68 J	220 J	53000 J	70000 J	7500 J	--	5800
Mercury	ug/L	110	1.1	6.3	6.2	1.2	--	ND 0.10
Mercury, dissolved	ug/L	0.98 L	1.0 L	3.5 L	3.8 L	0.60 B	--	ND 0.10
Nickel	ug/L	4.4 B	ND 1.5	300	310	ND 1.5	--	31
Nickel, dissolved	ug/L	5.1 B	1.7 B	280	300	ND 1.5	--	31
Potassium	ug/L	180000	9300	42000	41000	38000	--	19000
Potassium, dissolved	ug/L	200000	9300	44000	45000	35000	--	18000
Selenium	ug/L	ND 2.4	ND 2.4	25	25	ND 2.4	--	ND 2.0 L
Selenium, dissolved	ug/L	ND 2.5	ND 2.5	24	26	ND 2.5	--	ND 2.0 L
Silver	ug/L	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60	--	ND 0.60
Silver, dissolved	ug/L	ND 0.61	ND 0.61	ND 0.61	ND 0.61	ND 0.61	--	2.3 B
Sodium	ug/L	1200000	11000	940000	970000	120000	--	190000 J
Sodium, dissolved	ug/L	1500000	11000	1100000	1000000	120000	--	190000
Thallium	ug/L	5.6 K	3.6 K	75	79	11 K	--	ND 1.8
Thallium, dissolved	ug/L	4.6 B	3.3 B	79	79	11 B	--	ND 1.8
Vanadium	ug/L	9.1	ND 2.1	ND 2.1	ND 2.1	ND 2.1	--	ND 1.8
Vanadium, dissolved	ug/L	9.5	ND 2.1	ND 2.1	ND 2.1	ND 2.1	--	ND 1.8
Zinc	ug/L	73	10 B	390	410	12 B	--	36 B
Zinc, dissolved	ug/L	56 B	12 B	390 J	420 J	10 B	--	31

General Chemistry

Chloride	mg/L	1500	2.3	590	510	150	--	220
Sulfate	mg/L	970	22	3100	3000	120	--	22
Total suspended solids	mg/L	4.8	ND 4	8.8	11	ND 4	--	6
Total hardness	mg/L	--	--	--	--	--	--	--

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (a)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	C-22	C-24	R-110	R-112	SB-10	SB-11	SB-12	SB-13
Sample Date:	01/25/1999	01/26/1999	12/04/1998	12/04/1998	08/12/1998	08/13/1998	08/14/1998	08/19/1998

Parameters Units

TCL Volatiles

Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	10 K	130	11	ND 10	ND 10	2 K	6 J
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	ND 10	ND 10	ND 10	3 B	1 B	1 B	ND 10	3 B
Acetone	ug/L	ND 10	ND 10	6 J	ND 10 J	6 B	2 B	2 K	150 J
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	1 J
2-Butanone (MEK)	ug/L	ND 10 J	ND 10	8 J	ND 10	ND 10	ND 10	ND 10	41 J
Chloroform	ug/L	ND 10	ND 10	20	ND 10	5 J	4 J	2 K	2 J
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	1 J	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	2 J	ND 10	ND 10	2 J
Benzene	ug/L	82	310 K	96	1 J	ND 10	ND 10	1700	81000
Dibromochloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	24 J
2-Hexanone	ug/L	ND 10 J	ND 10	ND 10 J	ND 10 J	ND 10	ND 10	ND 10	ND 10 J
Tetrachloroethene	ug/L	ND 10	ND 10	2 J	ND 10	1 J	1 J	ND 10	5 B
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Toluene	ug/L	ND 10	ND 10	2 J	ND 10	ND 10	ND 10	1 K	71 J
Chlorobenzene	ug/L	480	1300 K	180	ND 3	ND 3	ND 3	5700	81000
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J

TCL Semi-volatiles

Phenol	ug/L	ND 10	ND 10	1 J	ND 10	ND 10	ND 10	74	770 J
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	11	3 J	ND 10	ND 10	ND 10	57	160 J
1,3-Dichlorobenzene	ug/L	13	23	8 J	ND 10	ND 1	15	300	170 J

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (b)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	C-22	C-24	R-110	R-112	SB-10	SB-11	SB-12	SB-13
Sample Date:	01/25/1999	01/26/1999	12/04/1998	12/04/1998	08/12/1998	08/13/1998	08/14/1998	08/19/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	19	150	120	ND 10	ND 10	78	4100	2800 J
1,2-Dichlorobenzene	ug/L	42	140	100	ND 10	ND 10	57	3000	960 J
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	3 J
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	1 J	79 J
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	21	10 J
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10 J	ND 10 J	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	1 J	ND 10	1 J	ND 10	ND 10	4 J	18	12
1,2,4-Trichlorobenzene	ug/L	6 J	10 J	5 J	ND 10	ND 10	150	970 J	71 J
Naphthalene	ug/L	ND 10	ND 10	1 J	2 J	ND 10	1 J	ND 10	79 J
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	63	2 J
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	8 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	2 J	5 J	ND 10	ND 10	ND 10	1 J
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	2 J	1 J	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	3 J	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	1 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10 J
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	2 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10 J	ND 10 J	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (c)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	C-22	C-24	R-110	R-112	SB-10	SB-11	SB-12	SB-13
Sample Date:	01/25/1999	01/26/1999	12/04/1998	12/04/1998	08/12/1998	08/13/1998	08/14/1998	08/19/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	2 J	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	5 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	1 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10 J	ND 10	ND 10	ND 10	R
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	2 B	15 B	2 B	ND 10	2 J	ND 10	ND 10	ND 10
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10 J	ND 10 J	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Hexachlorobenzene	ug/L	ND 0.025	ND 0.025	ND 0.025	ND 0.025	R	R	R	0.071 J

TAL Metals

Aluminum	ug/L	2400 J	1600 J	1500	ND 18	--	--	--	--
Aluminum, dissolved	ug/L	32	38	1000 B	ND 19	--	--	--	--
Antimony	ug/L	ND 2.9	ND 2.9	ND 2.9	ND 2.9	--	--	--	--
Antimony, dissolved	ug/L	ND 2.9	ND 2.9	ND 3.0	ND 3.0	--	--	--	--
Arsenic	ug/L	7.5 L	7.6 L	1000	6.5	--	--	--	--
Arsenic, dissolved	ug/L	ND 1.5	1.5	930	5.8 B	--	--	--	--
Barium	ug/L	80	80	13	20	--	--	--	--
Barium, dissolved	ug/L	59	64	1.5 B	21	--	--	--	--
Beryllium	ug/L	0.52	0.51	0.30	ND 0.20	--	--	--	--
Beryllium, dissolved	ug/L	ND 0.20	0.63	0.23	ND 0.21	--	--	--	--
Cadmium	ug/L	2.7	2.1	ND 0.20	0.53	--	--	--	--
Cadmium, dissolved	ug/L	ND 0.20	0.60	ND 0.21	0.71 B	--	--	--	--
Calcium	ug/L	110000	120000	22000 J	57000 J	--	--	--	--
Calcium, dissolved	ug/L	110000	130000	32000 J	58000 J	--	--	--	--
Chromium	ug/L	14	10	5.2 B	ND 0.70	--	--	--	--

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	C-22	C-24	R-110	R-112	SB-10	SB-11	SB-12	SB-13
Sample Date:	01/25/1999	01/26/1999	12/04/1998	12/04/1998	08/12/1998	08/13/1998	08/14/1998	08/19/1998

Parameters Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	1.3 B	1.6 B	1.8 B	0.98 B	--	--	--
Cobalt	ug/L	15	12	ND 1.9	7.9	--	--	--
Cobalt, dissolved	ug/L	6.8	7.5	ND 1.9	8.1	--	--	--
Copper	ug/L	14	8.3	23	ND 1.0	--	--	--
Copper, dissolved	ug/L	2.2 B	2.4 B	1.2	ND 1.0	--	--	--
Iron	ug/L	4200	3600	700	220 B	--	--	--
Iron, dissolved	ug/L	380 B	340 B	270 B	360 B	--	--	--
Lead	ug/L	18	11	6.5 B	1.0 B	--	--	--
Lead, dissolved	ug/L	ND 1.0	ND 1.0	ND 1.0	1.1 B	--	--	--
Magnesium	ug/L	56000	59000	12000 J	45000 J	--	--	--
Magnesium, dissolved	ug/L	54000	62000	17000 J	44000 J	--	--	--
Manganese	ug/L	8000	7800	80 J	2000 J	--	--	--
Manganese, dissolved	ug/L	6400	7200	21 B	2000 J	--	--	--
Mercury	ug/L	31	29	57	ND 0.10	--	--	--
Mercury, dissolved	ug/L	0.31	0.19	2.5 L	0.37 B	--	--	--
Nickel	ug/L	37	35	8.8 B	20	--	--	--
Nickel, dissolved	ug/L	25	31	3.6 B	20 B	--	--	--
Potassium	ug/L	99000	97000	46000	68000	--	--	--
Potassium, dissolved	ug/L	89000 J	93000 J	44000	74000	--	--	--
Selenium	ug/L	ND 1.9	7.8	7.2	ND 2.4	--	--	--
Selenium, dissolved	ug/L	2.5 K	5.2	4.7	ND 2.5	--	--	--
Silver	ug/L	3.3	1.4	ND 0.60	ND 0.60	--	--	--
Silver, dissolved	ug/L	ND 0.60	ND 0.60	ND 0.61	ND 0.61	--	--	--
Sodium	ug/L	570000	570000	1900000	1300000	--	--	--
Sodium, dissolved	ug/L	470000	590000	2300000	1600000	--	--	--
Thallium	ug/L	ND 1.2	ND 1.2	ND 19	10 K	--	--	--
Thallium, dissolved	ug/L	10	12 B	ND 1.9	7.8 B	--	--	--
Vanadium	ug/L	32	23	1800	ND 2.1	--	--	--
Vanadium, dissolved	ug/L	5.7	3.1	1400	ND 2.1	--	--	--
Zinc	ug/L	710	650	23 B	150	--	--	--
Zinc, dissolved	ug/L	300	400	5.4 B	180 B	--	--	--

General Chemistry

Chloride	mg/L	--	--	2000	2200	--	--	--
Sulfate	mg/L	--	--	730	770	--	--	--
Total suspended solids	mg/L	440	67	26	ND 4	--	--	--
Total hardness	mg/L	600	730	--	--	--	--	--

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (a)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:		SB-13	SW-1	SW-2	SW-2	SW-3	SW-4	SW-5	SW-6
Sample Date:		08/19/1998	12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998
		Dupl.			Dupl.				
Parameters	Units								
TCL Volatiles									
Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	7 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	3 B	ND 10	ND 10	ND 10	ND 10	ND 10	6 J	ND 10
Acetone	ug/L	160 J	ND 10	ND 10	ND 10	ND 10	9 J	13	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	1 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	42 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	2 J	ND 10	2 J	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	1 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	85000	47	48	49	43	16	13	ND 10
Dibromochloromethane	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	26 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10 J	ND 10 J	ND 10
Tetrachloroethene	ug/L	2 B	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	83 J	ND 10	ND 10	ND 10	ND 10	ND 10	5 J	ND 10
Chlorobenzene	ug/L	82000	130	130 J	130	120	42	34	ND 3
Ethylbenzene	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
TCL Semi-volatiles									
Phenol	ug/L	150 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	60 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	79 J	ND 1	ND 1	ND 1	ND 1	3	3	ND 1

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (b)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	SB-13	SW-1	SW-2	SW-2	SW-3	SW-4	SW-5	SW-6	
Sample Date:	08/19/1998	12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998	
	Dupl.			Dupl.					
Parameters	Units								
TCL Semi-volatiles (Cont'd)									
1,4-Dichlorobenzene	ug/L	1100 J	ND 10	ND 10	ND 10	ND 10	14	12	ND 10
1,2-Dichlorobenzene	ug/L	560 J	ND 10	ND 10	ND 10	ND 10	10	9 J	ND 10
2-Methylphenol	ug/L	1 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	15 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	29 J	ND 10	ND 10	ND 10	ND 10	ND 10	2 J	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	8 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	240 J	1 J	1 J	1 J	ND 10	4 J	3 J	ND 10
Naphthalene	ug/L	28 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10 J	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	1 J	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25 J	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	R	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (c)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	SB-13	SW-1	SW-2	SW-2	SW-3	SW-4	SW-5	SW-6
Sample Date:	08/19/1998	12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998
	Dupl.			Dupl.				
Parameters	Units							
TCL Semi-volatiles (Cont'd)								
Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	1 J	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	R	ND 10	R	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	2 J	ND 10	1 J	ND 10	ND 10	ND 10	2
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Hexachlorobenzene	ug/L	0.12 J	ND 0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025
TAL Metals								
Aluminum	ug/L	--	1700	1900	1900	3800	1100	1700
Aluminum, dissolved	ug/L	--	ND 18	ND 18	ND 18	ND 18	ND 18	18
Antimony	ug/L	--	ND 3.0	ND 3.0	ND 3.0	ND 3.0	ND 3.0	ND 3.0
Antimony, dissolved	ug/L	--	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9
Arsenic	ug/L	--	ND 1.5	5.6 J	3.1 J	1.9	2.3	2.0
Arsenic, dissolved	ug/L	--	ND 1.5	ND 1.5	ND 1.5	ND 1.5	ND 1.5	ND 1.5
Barium	ug/L	--	140	130	130	140	110	58
Barium, dissolved	ug/L	--	120	110	120	110	98	92
Beryllium	ug/L	--	0.40	0.30	0.25	0.30	0.22	0.22
Beryllium, dissolved	ug/L	--	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20
Cadmium	ug/L	--	ND 0.21	ND 0.21	ND 0.21	ND 0.21	ND 0.21	ND 0.21
Cadmium, dissolved	ug/L	--	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20
Calcium	ug/L	--	19000	19000	19000	21000	20000	22000
Calcium, dissolved	ug/L	--	18000	19000	20000	21000	20000	21000
Chromium	ug/L	--	2.7	3.3 J	2.2 J	5.7	ND 0.70	1.8

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:	SB-13	SW-1	SW-2	SW-2	SW-3	SW-4	SW-5	SW-6
Sample Date:	08/19/1998	12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998
	Dupl.			Dupl.				

Parameters

Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	--	ND 0.70	ND 0.70	ND 0.70	ND 0.70	ND 0.70	ND 0.70
Cobalt	ug/L	--	3.3	3.3	3.4	4.3	2.4	ND 1.9
Cobalt, dissolved	ug/L	--	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9
Copper	ug/L	--	8.5	5.9	6.6	6.7	4.0	6.3
Copper, dissolved	ug/L	--	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.1 B
Iron	ug/L	--	4100	4400	3700	6500	2300	3400
Iron, dissolved	ug/L	--	28 B	58 B	58 B	470 B	22 B	31 B
Lead	ug/L	--	5.8 K	4.5 K	4.7 K	5.8 K	2.5 K	3.5 K
Lead, dissolved	ug/L	--	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Magnesium	ug/L	--	10000	11000	11000	14000	12000	14000
Magnesium, dissolved	ug/L	--	10000	11000	12000	13000	11000	14000
Manganese	ug/L	--	500	650	620	720	540	620
Manganese, dissolved	ug/L	--	470	600	640	690	520	580
Mercury	ug/L	--	0.13	0.30	0.24	0.21	0.13	0.18
Mercury, dissolved	ug/L	--	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10
Nickel	ug/L	--	5.8	5.5	5.6	7.4	3.6	4.8
Nickel, dissolved	ug/L	--	2.7	2.7	2.8	2.7	2.5	2.6
Potassium	ug/L	--	4500	31000	31000	40000	13000	28000
Potassium, dissolved	ug/L	--	3900	24000	31000	38000	12000	26000
Selenium	ug/L	--	ND 2.5 L	ND 2.5 L	ND 2.5 L	ND 2.5 L	ND 2.5 L	ND 2.5 L
Selenium, dissolved	ug/L	--	ND 2.4	ND 2.4	ND 2.4	ND 2.4	ND 2.4	ND 2.4
Silver	ug/L	--	ND 0.61	ND 0.61	ND 0.61	ND 0.61	ND 0.61	ND 0.61
Silver, dissolved	ug/L	--	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60	ND 0.60
Sodium	ug/L	--	28000	110000	110000	150000	63000	120000
Sodium, dissolved	ug/L	--	26000	88000	110000	150000	63000	120000
Thallium	ug/L	--	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9
Thallium, dissolved	ug/L	--	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9	ND 1.9
Vanadium	ug/L	--	9.1	11	7.8	11	5.1	7.4
Vanadium, dissolved	ug/L	--	ND 2.1	ND 2.1	ND 2.1	ND 2.1	ND 2.1	ND 2.1
Zinc	ug/L	--	47	42	35	45	29 B	36 B
Zinc, dissolved	ug/L	--	20 B	25 B	22 B	16 B	21 B	21 B

General Chemistry

Chloride	mg/L	--	--	--	--	--	--	--
Sulfate	mg/L	--	--	--	--	--	--	--
Total suspended solids	mg/L	--	170	92 J	43 J	110	26	28
Total hardness	mg/L	--	100	100	100	120	65	120

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (a)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:

Sample Date:

	SW-8	SW-9	SW-10	SW-11	SW-12
	12/15/1998	12/16/1998	01/26/1999	01/26/1999	01/26/1999

Parameters

Units

TCL Volatiles

Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	170 K	6 J	7 J
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	4 J	ND 10	ND 10	ND 10	ND 10
Acetone	ug/L	8 J	9 J	ND 10	ND 10	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethene (total)	ug/L	1 J	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	70	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	27	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	ND 10	ND 10	900	48	52
Dibromochloromethane	ug/L	2 J	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10 J	ND 10 J	ND 10	ND 10	ND 10
Tetrachloroethene	ug/L	13	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	3 J	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	ND 3	5	4500	43	42
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10

TCL Semi-volatiles

Phenol	ug/L	ND 10	ND 10	32	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	40	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	ND 1	1 J	43	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (b)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:

Sample Date:

SW-8	SW-9	SW-10	SW-11	SW-12
12/15/1998	12/16/1998	01/26/1999	01/26/1999	01/26/1999

Parameters

Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	6 J	710	3 J	4 J
1,2-Dichlorobenzene	ug/L	ND 10	4 J	410	ND 10	4 J
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	7 J	ND 10	ND 10	2 J	ND 10
Nitrobenzene	ug/L	ND 10	1 J	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10	1 J	5 J	ND 10	ND 10
Naphthalene	ug/L	ND 10	ND 10	9 J	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (c)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:

Sample Date:

SW-8	SW-9	SW-10	SW-11	SW-12
12/15/1998	12/16/1998	01/26/1999	01/26/1999	01/26/1999

Parameters

Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	ND 10	1 J	ND 10	2 B	7 B
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1
Hexachlorobenzene	ug/L	0.080 J	ND 0.025	ND 0.025 L	ND 0.025 J	ND 0.025

TAL Metals

Aluminum	ug/L	3100	2100	1000 J	440 J	410 J
Aluminum, dissolved	ug/L	14000	25	77	110	140
Antimony	ug/L	ND 3.0	ND 3.0	ND 2.9	ND 2.9	ND 2.9
Antimony, dissolved	ug/L	ND 29	ND 2.9	ND 2.9	ND 2.9	ND 2.9
Arsenic	ug/L	32	1.5	ND 2.4 L	3.6 L	4.0 L
Arsenic, dissolved	ug/L	300	ND 1.5	ND 1.5	2.8	3.4
Barium	ug/L	37	100	78	30	29
Barium, dissolved	ug/L	280	86	54	22	23
Beryllium	ug/L	ND 0.21	ND 0.21	0.32	ND 0.30	ND 0.30
Beryllium, dissolved	ug/L	ND 2.0	ND 0.20	ND 0.20	ND 0.20	ND 0.20
Cadmium	ug/L	ND 0.21	ND 0.21	ND 0.50	ND 0.50	ND 0.50
Cadmium, dissolved	ug/L	ND 2.0	ND 0.20	ND 0.20	ND 0.20	ND 0.20
Calcium	ug/L	14000	27000	19000	30000	30000
Calcium, dissolved	ug/L	140000	27000	18000	28000	30000
Chromium	ug/L	41	3.3	2.6	2.9	2.5

TABLE 3A
ANALYTICAL RESULTS SUMMARY - GROUNDWATER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (d)
Date Printed: May 12, 1999
Time Printed: 2:22 pm

Sample Location:

Sample Date:

SW-8	SW-9	SW-10	SW-11	SW-12
<u>12/15/1998</u>	<u>12/16/1998</u>	<u>01/26/1999</u>	<u>01/26/1999</u>	<u>01/26/1999</u>

Parameters

Units

TAL Metals (Cont'd)

Chromium, dissolved	ug/L	350	ND 0.70	0.84 B	1.9 B	2.2 B
Cobalt	ug/L	ND 1.9	3.4	4.9	ND 3.6	ND 3.6
Cobalt, dissolved	ug/L	ND 19	ND 1.9	4.5	ND 1.9	ND 1.9
Copper	ug/L	2.0	7.3	9.3	12	11
Copper, dissolved	ug/L	11 B	1.3 B	4.5 B	11 B	11 B
Iron	ug/L	720	3900	3500	500	430
Iron, dissolved	ug/L	250 B	25 B	1000 J	48 B	39 B
Lead	ug/L	1.4 K	5.1 K	2.5	ND 1.0	1.5
Lead, dissolved	ug/L	ND 10	ND 1.0	ND 1.0	ND 1.0	ND 1.0
Magnesium	ug/L	9800	20000	14000	9700	9200
Magnesium, dissolved	ug/L	91000	20000	17000	9000	9700
Manganese	ug/L	140	830	950	68	67
Manganese, dissolved	ug/L	580	760	1100	9.0	9.5
Mercury	ug/L	100	1.0	9.7	1.6	1.8
Mercury, dissolved	ug/L	23	0.25	0.49	0.30	0.33
Nickel	ug/L	3.2	6.6	5.7	ND 3.2	ND 3.2
Nickel, dissolved	ug/L	26	2.7	4.9	3.1	3.1
Potassium	ug/L	430000	44000	60000	130000	120000
Potassium, dissolved	ug/L	400000	46000	62000 J	110000 J	120000 J
Selenium	ug/L	2.7 L	ND 2.5 L	ND 1.9	ND 1.9	ND 1.9
Selenium, dissolved	ug/L	63	ND 2.4	ND 2.4	ND 2.4	ND 2.4
Silver	ug/L	ND 0.61	ND 0.61	0.63	0.79	ND 0.60
Silver, dissolved	ug/L	ND 6.0	ND 0.60	ND 0.60	ND 0.60	ND 0.60
Sodium	ug/L	1200000	200000	430000	93000	83000
Sodium, dissolved	ug/L	1100000	210000	420000	92000	98000
Thallium	ug/L	ND 1.9	ND 1.9	ND 1.2	ND 1.2	ND 1.2
Thallium, dissolved	ug/L	ND 19	ND 1.9	5.0	ND 1.9	2.0 B
Vanadium	ug/L	92	8.7	9.5	18	16
Vanadium, dissolved	ug/L	920	ND 2.1	ND 2.1	15	16
Zinc	ug/L	17 B	42	120	47	48
Zinc, dissolved	ug/L	110 J	21 B	67	7.6 B	9.4 B

General Chemistry

Chloride	mg/L	--	--	--	--	--
Sulfate	mg/L	--	--	--	--	--
Total suspended solids	mg/L	41	77	120	16	24
Total hardness	mg/L	90	170	340	360	400

Notes

- NDx - Not detected at or above x.
- J - Estimated.
- VOCs collected on 08/18/98 for SB-13 and SB-13 Dupl.
- Not applicable.
- K - Value is estimated indicating a potential high bias.
- L - Value is estimated indicating a potential low bias.
- B - Analyte was present in an associated blank, indicating probable contamination.
- R - Rejected.
- Dupl. - Field duplicate.
- Total and dissolved mercury samples for A-17 were re-collected on 4/23/99.

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (a)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SD-1	SD-2	SD-2	SD-3	SD-4	SD-5	SD-6	SD-7
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998	12/15/1998
			Dupl.					

Parameters Units

TCL Volatiles

Chloromethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Bromomethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Vinyl chloride	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Chloroethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Methylene chloride	ug/Kg	7 B	10 B	8 B	10 B	8 B	5 B	8 B	42 B
Acetone	ug/Kg	ND 19 J	83 B	88 B	76 B	ND 20 J	52 B	54 B	ND 20
Carbon disulfide	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
1,1-Dichloroethene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
1,1-Dichloroethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
1,2-Dichloroethene (total)	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
2-Butanone (MEK)	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18 J	ND 23 J	ND 20 J
Chloroform	ug/Kg	ND 19	ND 15	2 J	2 B	4 B	3 B	3 B	3 B
1,2-Dichloroethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
1,1,1-Trichloroethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Carbon tetrachloride	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Bromodichloromethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
1,2-Dichloropropane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
cis-1,3-Dichloropropene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Trichloroethene	ug/Kg	ND 19	ND 15	ND 16	ND 16	2 J	ND 18	ND 23 J	ND 20
Benzene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
Dibromochloromethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
trans-1,3-Dichloropropene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20
1,1,2-Trichloroethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
Bromoform	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
2-Hexanone	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
Tetrachloroethene	ug/Kg	ND 19	5 J	ND 16	ND 16	32 J	5 B	ND 23 J	7 J
1,1,2,2-Tetrachloroethane	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
Toluene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
Chlorobenzene	ug/Kg	13	ND 4	4 J	ND 5	ND 6 J	ND 5	ND 7 J	ND 6 J
Ethylbenzene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
Styrene	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J
Xylenes (total)	ug/Kg	ND 19	ND 15	ND 16	ND 16	ND 20 J	ND 18	ND 23 J	ND 20 J

TCL Semi-volatiles

Phenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
--------	-------	--------	--------	--------	--------	----------	--------	----------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (b)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:		SD-1	SD-2	SD-2	SD-3	SD-4	SD-5	SD-6	SD-7
Sample Depth:		--	--	--	--	--	--	--	--
Sample Date:		12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998	12/15/1998
				Dupl.					
Parameters	Units								
TCL Semi-volatiles (Cont'd)									
Bis(2-chloroethyl)ether	ug/Kg	ND 190	ND 150	ND 160	ND 160	ND 210 J	ND 180	ND 240 J	ND 200
2-Chlorophenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
1,3-Dichlorobenzene	ug/Kg	710	ND 500	ND 540	ND 530	ND 680 J	ND 600	97 J	ND 650
1,4-Dichlorobenzene	ug/Kg	3000	ND 500	ND 540	ND 530	ND 680 J	ND 600	550 J	220
1,2-Dichlorobenzene	ug/Kg	290 J	ND 500	ND 540	ND 530	ND 680 J	ND 600	96 J	ND 650
2-Methylphenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
4-Methylphenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	71 J	ND 600	ND 780 J	ND 650
N-nitroso-di-n-propylamine	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Hexachloroethane	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Nitrobenzene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Isophorone	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2-Nitrophenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,4-Dimethylphenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Bis(2-chloroethoxy)methane	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,4-Dichlorophenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
1,2,4-Trichlorobenzene	ug/Kg	420 J	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Naphthalene	ug/Kg	84 J	ND 500	ND 540	79 J	110 J	ND 600	ND 780 J	83
4-Chloroaniline	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Hexachlorobutadiene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
4-Chloro-3-methylphenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2-Methylnaphthalene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Hexachlorocyclopentadiene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,4,6-Trichlorophenol	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,4,5-Trichlorophenol	ug/Kg	ND 1500	ND 1200	ND 1300	ND 1300	ND 1600 J	ND 1400	ND 1900 J	ND 1600
2-Chloronaphthalene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2-Nitroaniline	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
Dimethyl phthalate	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Acenaphthylene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,6-Dinitrotoluene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
3-Nitroaniline	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
Acenaphthene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,4-Dinitrophenol	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
4-Nitrophenol	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
Dibenzofuran	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
2,4-Dinitrotoluene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Diethyl phthalate	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (c)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:		SD-1	SD-2	SD-2	SD-3	SD-4	SD-5	SD-6	SD-7
Sample Depth:		--	--	--	--	--	--	--	--
Sample Date:		12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998	12/15/1998
				Dupl.					
Parameters	Units								
TCL Semi-volatiles (Cont'd)									
Fluorene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
4-Chlorophenyl phenylether	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
4-Nitroaniline	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
4,6-Dinitro-2-methylphenol	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
N-nitrosodiphenylamine	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
4-Bromophenyl phenylether	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Pentachlorophenol	ug/Kg	ND 1300	ND 990	ND 1100	ND 1100	ND 1300 J	ND 1200	ND 1500 J	ND 1300
Phenanthrene	ug/Kg	100 J	ND 500	ND 540	70 J	100 J	ND 600	88 J	91 J
Anthracene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Carbazole	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Di-n-butyl phthalate	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Fluoranthene	ug/Kg	200 J	ND 500	ND 540	74 J	110 J	ND 600	130 J	110 J
Pyrene	ug/Kg	190 J	ND 500	ND 540	62 J	93 J	ND 600	96 J	83 J
Butylbenzylphthalate	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Benzo(a)anthracene	ug/Kg	160 J	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
3,3'-Dichlorobenzidine	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Chrysene	ug/Kg	220 J	ND 500	ND 540	58 J	71 J	ND 600	83 J	70 J
Bis(2-ethylhexyl)phthalate	ug/Kg	140 J	ND 500	ND 540	ND 530	110 J	ND 600	590 J	110 J
Di-n-octyl phthalate	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Benzo(b)fluoranthene	ug/Kg	220	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Benzo(k)fluoranthene	ug/Kg	180 J	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Benzo(a)pyrene	ug/Kg	210 J	ND 500	ND 540	ND 530	ND 680 J	86 J	ND 780 J	140 J
Indeno(1,2,3-cd)pyrene	ug/Kg	98 J	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Dibenz(a,h)anthracene	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Benzo(g,h,i)perylene	ug/Kg	94 J	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
1,2-Diphenyl-hydrazine	ug/Kg	ND 640	ND 500	ND 540	ND 530	ND 680 J	ND 600	ND 780 J	ND 650
Hexachlorobenzene	ug/Kg	--	--	--	--	--	--	--	--
TAL Metals									
Aluminum	mg/Kg	14000	21000	24000	22000	21000 J	24000	19000 J	18000
Antimony	mg/Kg	ND 0.56 L	ND 0.44 L	ND 0.47 L	ND 0.46 L	2.1 JL	ND 0.52 L	ND 0.68 JL	ND 0.57 L
Arsenic	mg/Kg	11	12	10	12	36 J	7.9	18 J	8.7
Barium	mg/Kg	120	86	96	87	110 J	81	79 J	64
Beryllium	mg/Kg	1.9	1.1	1.4	1.4	1.4 J	1.1	1.1 J	1.1
Cadmium	mg/Kg	ND 0.096 L	ND 0.38 L	ND 0.16 L	ND 0.16 L	ND 0.10 JL	ND 0.18 L	ND 0.12 JL	ND 0.20 L

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (d)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SD-1	SD-2	SD-2	SD-3	SD-4	SD-5	SD-6	SD-7
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	12/17/1998	12/17/1998	12/17/1998	12/17/1998	12/16/1998	12/16/1998	12/15/1998	12/15/1998
			Dupl.					

Parameters Units

TAL Metals (Cont'd)

Calcium	mg/Kg	1100	1500	1700	1600	2300 J	1700	3100 J	2800
Chromium	mg/Kg	32	45	52	55	99 J	52	62 J	52
Cobalt	mg/Kg	13	14	16	13	17 J	11	20 J	16
Copper	mg/Kg	20	14	16	23	78 J	15	29 J	20
Iron	mg/Kg	23000	33000	39000	30000	40000 J	32000	34000 J	37000
Lead	mg/Kg	29	19	19	32	120 J	16	40 J	24
Magnesium	mg/Kg	2200	5600	6400	5800	5600 J	6600	6300 J	6400
Manganese	mg/Kg	190	290	340	260	580 J	260	780 J	740
Mercury	mg/Kg	0.65	0.18	0.19	ND 0.070	1.3 J	ND 0.81	9.4 J	0.52
Nickel	mg/Kg	24	25	28	26	32 J	25	40 J	30
Potassium	mg/Kg	960 J	3600 J	4000 J	2400 J	2700 J	2900 J	3000 J	3400 J
Selenium	mg/Kg	1.6	1.5	1.5	1.5	3.0 J	0.62	2.2 J	1.6
Silver	mg/Kg	0.86 L	1.2 L	1.3 L	1.0 L	2.1 JL	1.1 L	1.5 JL	1.5 L
Sodium	mg/Kg	160	1400	1500	790	1000 J	860	1200 J	1700
Thallium	mg/Kg	1.5 B	1.9 B	2.0 B	1.6 B	1.7 B	1.6 B	1.5 B	1.8 B
Vanadium	mg/Kg	72	56	60	52	57 J	58	78 J	51
Zinc	mg/Kg	220	160	190	160	520 J	140	220 J	190
Methyl mercury	ug/Kg	0.73	1.9	1.7	0.56	0.65 J	0.14	4.1 J	3.0

General Chemistry

Ammonia	mg/Kg	46	49	51	73	21 J	23	50 J	44
Sulfide	mg/Kg	ND 31	ND 24	ND 26	ND 26	ND 33 JL	ND 29	ND 37 JL	ND 31
Coarse gravel (19.0 mm)	%	0.00	0.00	0.00	0.00	0.00 J	0.00	0.00 J	0.00
Fine gravel (4.75 mm)	%	0.00	0.00	0.00	0.00	0.00 J	0.00	0.00 J	0.00
Coarse sand (2.00 mm)	%	34	31	30	34	21 J	25	20 J	22
Medium sand (0.425 mm)	%	38	42	44	47	45 J	49	46 J	46
Fine sand (0.075 mm)	%	18	19	16	15	21 J	17	24 J	19
Slits/clays (<0.075 mm)	%	6.4	6.2	3.3	0.6	8.3 J	7.9	7.8 J	6.9
Total organic carbon (TOC)	mg/Kg	630000	17000	16000	15000	53000 J	37000	59000 J	44000

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (a)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:		SD-8	SD-9	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6
Sample Depth:		--	--	--	--	--	--	--	--
Sample Date:		12/15/1998	12/16/1998	08/06/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/05/1998
Parameters	Units								
TCL Volatiles									
Chloromethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Bromomethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Vinyl chloride	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	3 J
Chloroethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Methylene chloride	ug/Kg	11 B	7 B	3 B	4 B	2 B	2 B	7 B	3 B
Acetone	ug/Kg	250 J	81 B	7 B	ND 12	4 B	ND 11	2 B	8 B
Carbon disulfide	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	1 J	1 J
1,1-Dichloroethene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
1,1-Dichloroethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
1,2-Dichloroethene (total)	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
2-Butanone (MEK)	ug/Kg	100 J	ND 17 J	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Chloroform	ug/Kg	5 B	3 J	5 J	1 J	11 J	ND 11	ND 11	47 J
1,2-Dichloroethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
1,1,1-Trichloroethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Carbon tetrachloride	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	6 J	ND 11	ND 11	ND 12
Bromodichloromethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
1,2-Dichloropropane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
cis-1,3-Dichloropropene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Trichloroethene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	2 J
Benzene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	2900
Dibromochloromethane	ug/Kg	8 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
trans-1,3-Dichloropropene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
1,1,2-Trichloroethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Bromoform	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
2-Hexanone	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Tetrachloroethene	ug/Kg	6 B	ND 17	18	5 J	4 J	ND 11	5 J	ND 12
1,1,2,2-Tetrachloroethane	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Toluene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	2 J
Chlorobenzene	ug/Kg	ND 6 J	ND 5	2 J	4 J	ND 4	ND 3	ND 3	15000
Ethylbenzene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Styrene	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	ND 12
Xylenes (total)	ug/Kg	ND 22 J	ND 17	ND 13	ND 12	ND 14	ND 11	ND 11	1 J

TCL Semi-volatiles

Phenol	ug/Kg	ND 720 J	ND 550	ND 430 J	ND 410	ND 450	ND 380	ND 380	ND 390
--------	-------	----------	--------	----------	--------	--------	--------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (b)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

<i>Sample Location:</i>	SD-8	SD-9	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6
<i>Sample Depth:</i>	-	-	-	-	-	-	-	-
<i>Sample Date:</i>	12/15/1998	12/16/1998	08/06/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/05/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl) ether	ug/Kg	ND 220 J	ND 170	ND 130	ND 120	ND 140	ND 110	ND 120	ND 120
2-Chlorophenol	ug/Kg	ND 720 J	ND 550	ND 430 J	ND 410	ND 450	ND 380	ND 380	ND 390
1,3-Dichlorobenzene	ug/Kg	96 J	ND 550	ND 430	ND 410	120 J	ND 380	ND 380	1200
1,4-Dichlorobenzene	ug/Kg	650 J	62 J	210	160 J	1600 J	ND 380	ND 380	6500
1,2-Dichlorobenzene	ug/Kg	160 J	ND 550	66 J	ND 410	280 J	ND 380	ND 380	5300
2-Methylphenol	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2,2-Oxybis(1-chloropropane)	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
4-Methylphenol	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
N-nitroso-di-n-propylamine	ug/Kg	ND 720 J	ND 550	ND 430 J	ND 410	ND 450	ND 380	ND 380	ND 390
Hexachloroethane	ug/Kg	ND 720 J	ND 550	290 J	65 J	240 J	ND 380	ND 380	ND 390
Nitrobenzene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Isophorone	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2-Nitrophenol	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2,4-Dimethylphenol	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Bis(2-chloroethoxy)methane	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2,4-Dichlorophenol	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
1,2,4-Trichlorobenzene	ug/Kg	81 J	ND 550	96 J	67 J	520	ND 380	46 J	260 J
Naphthalene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	110 J	ND 380	ND 380	ND 390
4-Chloroaniline	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Hexachlorobutadiene	ug/Kg	ND 720 J	ND 550	140 J	ND 410	84 J	ND 380	ND 380	ND 390
4-Chloro-3-methylphenol	ug/Kg	ND 720 J	ND 550	ND 430 J	ND 410	ND 450	ND 380	ND 380	ND 390
2-Methylnaphthalene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	160 J	ND 380	ND 380	ND 390
Hexachlorocyclopentadiene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2,4,6-Trichlorophenol	ug/Kg	ND 720 J	ND 550	48 J	ND 410	ND 450	ND 380	ND 380	ND 390
2,4,5-Trichlorophenol	ug/Kg	ND 1700 J	ND 1300	ND 1000	ND 990	ND 1100	ND 910	ND 920	ND 940
2-Chloronaphthalene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2-Nitroaniline	ug/Kg	ND 1400 J	ND 1100	ND 840	ND 810	ND 890	ND 750	ND 760	ND 770
Dimethyl phthalate	ug/Kg	ND 720 J	ND 550	340 J	62 J	400 J	ND 380	ND 380	ND 390
Acenaphthylene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
2,6-Dinitrotoluene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
3-Nitroaniline	ug/Kg	ND 1400 J	ND 1100	ND 840	ND 810	ND 890	ND 750	ND 760	ND 770
Acenaphthene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	62 J	ND 380	ND 380	ND 390
2,4-Dinitrophenol	ug/Kg	ND 1400 J	ND 1100	ND 840	ND 810	ND 890	ND 750	ND 760	ND 770
4-Nitrophenol	ug/Kg	ND 1400 J	ND 1100	ND 840	ND 810	ND 890	ND 750	ND 760	ND 770
Dibenzofuran	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	61 J	ND 380	ND 380	ND 390
2,4-Dinitrotoluene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Diethyl phthalate	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (c)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SD-8	SD-9	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	12/15/1998	12/16/1998	08/06/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/05/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	50 J	ND 380	ND 380	ND 390
4-Chlorophenyl phenylether	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
4-Nitroaniline	ug/Kg	ND 1400 J	ND 1100	ND 840	ND 810	ND 890	ND 750	ND 760	ND 770
4,6-Dinitro-2-methylphenol	ug/Kg	ND 1400 J	ND 1100	ND 840	ND 810	ND 890	ND 750	ND 760	ND 770
N-nitrosodiphenylamine	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
4-Bromophenyl phenylether	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Pentachlorophenol	ug/Kg	ND 1400 J	ND 1100	270 J	ND 810	ND 890	ND 750	ND 760	ND 770
Phenanthrene	ug/Kg	ND 720 J	ND 550	130 J	160 J	440 J	45 J	47 J	50 J
Anthracene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	73 J	ND 380	ND 380	ND 390
Carbazole	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Di-n-butyl phthalate	ug/Kg	ND 720 J	ND 550	100 J	50 J	220 J	ND 380	ND 380	ND 390
Fluoranthene	ug/Kg	ND 720 J	ND 550	190 J	260 J	360 J	54 J	57 J	96 J
Pyrene	ug/Kg	ND 720 J	ND 550	170 J	280 J	610 J	53 J	47 J	120 J
Butylbenzylphthalate	ug/Kg	ND 720 J	ND 550	700	84 J	480 J	ND 380	43 J	ND 390
Benzo(a)anthracene	ug/Kg	ND 720 J	ND 550	57 J	97 J	88 J	ND 380	ND 380	45 J
3,3'-Dichlorobenzidine	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Chrysene	ug/Kg	ND 720 J	ND 550	120 J	200 J	220 J	41 J	46 J	68 J
Bis(2-ethylhexyl)phthalate	ug/Kg	160 J	ND 550	1600	1200	5000	730	2900	1200
Di-n-octyl phthalate	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	310 J	ND 380	990	290 J
Benzo(b)fluoranthene	ug/Kg	ND 720 J	ND 550	110 J	170 J	130 J	ND 380	39 J	49 J
Benzo(k)fluoranthene	ug/Kg	ND 720 J	ND 550	81 J	150 J	88 J	ND 380	ND 380	59 J
Benzo(a)pyrene	ug/Kg	ND 720 J	ND 550	61 J	120 J	65 J	ND 380	ND 380	42 J
Indeno(1,2,3-cd)pyrene	ug/Kg	ND 720 J	ND 550	68 J	130 J	80 J	ND 380	ND 380	ND 390
Dibenz(a,h)anthracene	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390
Benzo(g,h,i)perylene	ug/Kg	ND 720 J	ND 550	89 J	160 J	160 J	ND 380	ND 380	ND 390
1,2-Diphenyl-hydrazine	ug/Kg	ND 720 J	ND 550	ND 430	ND 410	ND 450	ND 380	ND 380	ND 390

Hexachlorobenzene	ug/Kg	--	--	750	110 J	2800	350 J	540	43 J
-------------------	-------	----	----	-----	-------	------	-------	-----	------

TAL Metals

Aluminum	mg/Kg	17000 J	21000	2400	4200	14000	7500	6500	2600
Antimony	mg/Kg	0.97 JL	ND 0.48 L	0.49 JL	0.52 JL	2.3 JL	0.71 JL	1.7 JL	0.47 JL
Arsenic	mg/Kg	24 J	9.4	0.74 B	1.3 B	4.2	2.0 K	1.6 B	1.9 K
Barium	mg/Kg	120 J	72	61	74	450	4600	6600	60
Beryllium	mg/Kg	1.7 J	0.95	0.18	0.21	0.87	0.39	0.36	0.32
Cadmium	mg/Kg	ND 0.22 JL	ND 0.17 L	0.28	0.63	2.8	1.3	0.88	0.25

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (d)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SD-8	SD-9	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	12/15/1998	12/16/1998	08/06/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/05/1998

Parameters Units

TAL Metals (Cont'd)

Calcium	mg/Kg	1100 J	1700	1000	1900	9700	4800	6500	820
Chromium	mg/Kg	180 J	48	9.7 J	15 J	83 J	18 J	12 J	12 J
Cobalt	mg/Kg	8.3 J	10	1.8	2.7	9.2	6.3	6.8	2.5
Copper	mg/Kg	29 J	12	35 JK	29 JK	84 JK	22 JK	12 JK	12 JK
Iron	mg/Kg	32000 J	27000	6900	9400	27000	14000	9400	9500
Lead	mg/Kg	43 J	13	26 J	28 J	100 J	18 JK	22 J	7.5 J
Magnesium	mg/Kg	3200 J	5900	1000	1700	5000	2100	1300	500
Manganese	mg/Kg	160 J	210	56 JK	100 JK	320 JK	180 JK	140 JK	80 JK
Mercury	mg/Kg	140 J	ND 0.076	86 J	49 J	520 J	31 J	22 J	4.9 J
Nickel	mg/Kg	27 J	21	16	82	280	23	38	4.4
Potassium	mg/Kg	2300 J	3100 J	900	1900	7000	1200	1300	280
Selenium	mg/Kg	2.7 J	0.86 K	ND 0.26	0.33	0.60	0.32	0.49	ND 0.23
Silver	mg/Kg	1.2 JL	0.96 L	0.33 J	0.68 J	1.7 J	0.60 J	0.46 J	0.40 J
Sodium	mg/Kg	1800 J	870	140	180	1400	1300	850	83
Thallium	mg/Kg	1.9 B	1.5 B	ND 0.23	0.30	0.42	ND 0.20	0.28	0.34
Vanadium	mg/Kg	66 J	54	11	18	45	21	17	12
Zinc	mg/Kg	110 J	88	270 J	340 J	1600 J	290 J	180 J	140 J
Methyl mercury	ug/Kg	55 J	0.41	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	ND 5.4 J	60	--	--	--	--	--	--
Sulfide	mg/Kg	ND 35 JL	ND 27	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	0.00 J	0.00	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	0.00 J	0.00	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	20 J	22	--	--	--	--	--	--
Medium sand (0.425 mm)	%	49 J	46	--	--	--	--	--	--
Fine sand (0.075 mm)	%	20 J	18	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	7.0 J	7.9	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	72000 J	34000	--	--	--	--	--	--

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (a)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:		SED-7	SED-8	SED-9	SED-10	SED-10	SED-11	SED-12	SED-13
Sample Depth:		--	--	--	--	--	--	--	--
Sample Date:		08/05/1998	08/04/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998
						Dupl.			
Parameters	Units								
TCL Volatiles									
Chloromethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Bromomethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Vinyl chloride	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	4 J	78 J	82
Chloroethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Methylene chloride	ug/Kg	ND 12	3 B	3 B	ND 11	2 B	5 B	6 B	3 B
Acetone	ug/Kg	ND 12	4 B	5 B	ND 11	2 B	14 B	12 B	15 B
Carbon disulfide	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	4 J	2 J	ND 17
1,1-Dichloroethene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
1,1-Dichloroethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
1,2-Dichloroethene (total)	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	13 J	ND 22 J	ND 17
2-Butanone (MEK)	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	19 J	10 J	5 J
Chloroform	ug/Kg	ND 12	ND 12	9 J	ND 11	ND 11	15 J	56 J	ND 17
1,2-Dichloroethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	2 J	ND 22 J	ND 17
1,1,1-Trichloroethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Carbon tetrachloride	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Bromodichloromethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
1,2-Dichloropropane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
cis-1,3-Dichloropropene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Trichloroethene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	3 J	6 J	ND 17
Benzene	ug/Kg	18	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
Dibromochloromethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
trans-1,3-Dichloropropene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18	ND 22 J	ND 17
1,1,2-Trichloroethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
Bromoform	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
2-Hexanone	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
Tetrachloroethene	ug/Kg	ND 12	ND 12	4 J	3 J	3 J	20 J	330 J	6 J
1,1,2,2-Tetrachloroethane	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
Toluene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	8 J	ND 22 J	ND 17
Chlorobenzene	ug/Kg	1200	96	2 J	2 J	ND 3	3 J	ND 7 J	2 J
Ethylbenzene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
Styrene	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	ND 22 J	ND 17
Xylenes (total)	ug/Kg	ND 12	ND 12	ND 13	ND 11	ND 11	ND 18 J	5 J	ND 17
TCL Semi-volatiles									
Phenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (b)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SED-7	SED-8	SED-9	SED-10	SED-10	SED-11	SED-12	SED-13
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	08/05/1998	08/04/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998
	Dupl.							

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 120	ND 120	ND 660	ND 110	ND 110	ND 1700	ND 220 J	ND 1600
2-Chlorophenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
1,3-Dichlorobenzene	ug/Kg	40 J	220 J	ND 2200	ND 370	ND 380	600 J	ND 730 J	ND 5200
1,4-Dichlorobenzene	ug/Kg	520	1800	ND 2200	ND 370	ND 380	1500 J	ND 730 J	940 J
1,2-Dichlorobenzene	ug/Kg	460	240 J	ND 2200	ND 370	ND 380	930 J	ND 730 J	ND 5200
2-Methylphenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
4-Methylphenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	86 J	ND 5200
N-nitroso-di-n-propylamine	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Hexachloroethane	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	99 J	ND 5200
Nitrobenzene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Isophorone	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2-Nitrophenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,4-Dimethylphenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Bis(2-chloroethoxy)methane	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,4-Dichlorophenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
1,2,4-Trichlorobenzene	ug/Kg	58 J	ND 400	ND 2200	ND 370	ND 380	650 J	120 J	ND 5200
Naphthalene	ug/Kg	58 J	ND 400	340 J	ND 370	ND 380	4100 J	100 J	2600 J
4-Chloroaniline	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Hexachlorobutadiene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	220 J	ND 5200
4-Chloro-3-methylphenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2-Methylnaphthalene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	120 J	ND 5200
Hexachlorocyclopentadiene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,4,6-Trichlorophenol	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,4,5-Trichlorophenol	ug/Kg	ND 970	ND 970	ND 5200	ND 900	ND 910	ND 14000	ND 1800 J	ND 13000
2-Chloronaphthalene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2-Nitroaniline	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
Dimethyl phthalate	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	290 J	ND 5200
Acenaphthylene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,6-Dinitrotoluene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
3-Nitroaniline	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
Acenaphthene	ug/Kg	ND 400	100 J	730 J	ND 370	ND 380	620 J	ND 730 J	ND 5200
2,4-Dinitrophenol	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
4-Nitrophenol	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
Dibenzofuran	ug/Kg	ND 400	52 J	430 J	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
2,4-Dinitrotoluene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Diethyl phthalate	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (c)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SED-7	SED-8	SED-9	SED-10	SED-10	SED-11	SED-12	SED-13	
Sample Depth:	--	--	--	--	--	--	--	--	
Sample Date:	08/05/1998	08/04/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	
					Dupl.				
Parameters	Units								
TCL Semi-volatiles (Cont'd)									
Fluorene	ug/Kg	ND 400	97 J	770 J	ND 370	ND 380	690 J	ND 730 J	ND 5200
4-Chlorophenyl phenylether	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
4-Nitroaniline	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
4,6-Dinitro-2-methylphenol	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
N-nitrosodiphenylamine	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
4-Bromophenyl phenylether	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Pentachlorophenol	ug/Kg	ND 800	ND 800	ND 4300	ND 740	ND 750	ND 11000	ND 1500 J	ND 10000
Phenanthrene	ug/Kg	ND 400	950	7500	54 J	ND 380	1700 J	530 J	1100 J
Anthracene	ug/Kg	ND 400	240 J	2500	ND 370	ND 380	ND 5800	74 J	ND 5200
Carbazole	ug/Kg	ND 400	130 J	1500 J	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Di-n-butyl phthalate	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	140 J	ND 5200
Fluoranthene	ug/Kg	ND 400	1100	8900	110 J	ND 380	1300 J	430 J	670 J
Pyrene	ug/Kg	ND 400	1100	9300	100 J	42 J	1200 J	740 J	540 J
Butylbenzylphthalate	ug/Kg	ND 400	ND 400	17000	100 J	49 J	1000 J	ND 730 J	ND 5200
Benzo(a)anthracene	ug/Kg	ND 400	560	4900	60 J	ND 380	ND 5800	97 J	ND 5200
3,3'-Dichlorobenzidine	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Chrysene	ug/Kg	ND 400	530	4700	63 J	ND 380	800 J	280 J	ND 5200
Bis(2-ethylhexyl)phthalate	ug/Kg	ND 400	380 J	3400	320 B	250 J	29000	17000 J	8700
Di-n-octyl phthalate	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	7200	1200 J	730 J
Benzo(b)fluoranthene	ug/Kg	ND 400	390 J	3600	45 J	ND 380	ND 5800	160 J	ND 5200
Benzo(k)fluoranthene	ug/Kg	ND 400	500	4200	52 J	ND 380	ND 5800	130 J	ND 5200
Benzo(a)pyrene	ug/Kg	ND 400	490	4700	57 J	ND 380	ND 5800	90 J	ND 5200
Indeno(1,2,3-cd)pyrene	ug/Kg	ND 400	330 J	3900	46 J	ND 380	ND 5800	120 J	ND 5200
Dibenz(a,h)anthracene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Benzo(g,h,i)perylene	ug/Kg	ND 400	360 J	4700	52 J	ND 380	ND 5800	170 J	ND 5200
1,2-Diphenyl-hydrazine	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	ND 5800	ND 730 J	ND 5200
Hexachlorobenzene	ug/Kg	ND 400	ND 400	ND 2200	ND 370	ND 380	37000	2600 J	1200 J
TAL Metals									
Aluminum	mg/Kg	17000	3200	2200	9300	9000	2800	6700 J	4200
Antimony	mg/Kg	0.74 JL	0.50 JL	1.5 JL	0.50 JL	0.65 JL	1.5 JL	2.4 JL	1.1 JL
Arsenic	mg/Kg	6.2	2.2	1.2 B	3.4	2.9	0.83 B	2.6 B	1.1 B
Barium	mg/Kg	62	61	290	36	35	24	200 J	56
Beryllium	mg/Kg	0.68	0.17	0.14	0.45	0.54	0.32	1.1 J	0.19
Cadmium	mg/Kg	ND 0.037	0.46	0.68	0.092	0.13	2.8	3.4 J	0.63

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 3 (d)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

<i>Sample Location:</i>	SED-7	SED-8	SED-9	SED-10	SED-10	SED-11	SED-12	SED-13
<i>Sample Depth:</i>	--	--	--	--	--	--	--	--
<i>Sample Date:</i>	08/05/1998	08/04/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998	08/06/1998

Dupl.

Parameters Units

TAL Metals (Cont'd)

Calcium	mg/Kg	160	390	780	1200	1300	3800	30000 J	1300
Chromium	mg/Kg	26 J	5.4 J	46 J	14 J	14 J	28 J	79 J	26 J
Cobalt	mg/Kg	6.8	5.2	2.8	4.5	4.3	2.0	8.2 J	2.2
Copper	mg/Kg	9.2 JK	5.1 JK	78 JK	16 JK	40 JK	63 JK	180 JK	25 JK
Iron	mg/Kg	24000	5500	9700	12000	11000	5600	28000 J	5800
Lead	mg/Kg	9.5 J	4.8 J	30 J	14 J	17 J	40 J	130 J	18 J
Magnesium	mg/Kg	2500	390	1300	1100	1100	1500	13000 J	1100
Manganese	mg/Kg	120 JK	62 JK	100 JK	140 JK	130 JK	38 JK	260 JK	58 JK
Mercury	mg/Kg	3.0 J	6.3 J	140 J	5.1 J	10 J	61 J	75 J	5.3 J
Nickel	mg/Kg	13	5.9	18	9.9	12	29	110 J	20
Potassium	mg/Kg	1500	320	360	540	540	240	1200 J	410
Selenium	mg/Kg	0.47	ND 0.24	0.36	0.48	ND 0.23	ND 0.36	0.91 J	ND 0.34
Silver	mg/Kg	1.0 J	0.21 J	0.56 J	0.55 J	0.49 J	0.45 J	1.3 J	0.21 J
Sodium	mg/Kg	1900	280	36 B	51	57	840	1900 J	760
Thallium	mg/Kg	0.35	ND 0.22	0.34	ND 0.20	ND 0.20	ND 0.33	ND 0.40 J	ND 0.30
Vanadium	mg/Kg	38	7.3	18	24	24	35	48 J	25
Zinc	mg/Kg	41 J	120 J	750 J	54 J	120 J	600 J	1900 J	240 J
Methyl mercury	ug/Kg	--	--	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	--	--	--	--	--	--	--	--
Sulfide	mg/Kg	--	--	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	--	--	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	--	--	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	--	--	--	--	--	--	--	--
Medium sand (0.425 mm)	%	--	--	--	--	--	--	--	--
Fine sand (0.075 mm)	%	--	--	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	--	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	--	--	--	--	--	--	--	--

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (a)

Date Printed: May 12, 1999

Time Printed: 2:17 pm

Sample Location:	SED-14,	A-34S	C-21	C-21	C-21C	C-22	C-C20	C-C23
Sample Depth:	--	19-21 ft.	--	--	--	--	--	--
Sample Date:	08/06/1998	09/24/1998	01/13/1999	01/13/1999	01/13/1999	01/25/1999	01/26/1999	01/25/1999

Dupl.

Parameters Units

TCL Volatiles

Chloromethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
Bromomethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
Vinyl chloride	ug/Kg	86	--	50 J	ND 25 J	41 J	ND 20	140	110 JK
Chloroethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
Methylene chloride	ug/Kg	4 B	--	8 J	8 J	21 J	ND 20	ND 12	12 B
Acetone	ug/Kg	ND 20	--	170 J	190 J	460 J	44 K	ND 12	230 JK
Carbon disulfide	ug/Kg	ND 20	--	ND 71 J	ND 67 J	130 J	ND 20	ND 12	ND 42 J
1,1-Dichloroethene	ug/Kg	3 J	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
1,1-Dichloroethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
1,2-Dichloroethene (total)	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	6 JK
2-Butanone (MEK)	ug/Kg	ND 20	--	69 J	ND 67 J	140 J	ND 20	ND 12	ND 42 J
Chloroform	ug/Kg	10 J	--	ND 71 J	ND 67 J	ND 77 J	ND 20	7 J	21 JK
1,2-Dichloroethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
1,1,1-Trichloroethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
Carbon tetrachloride	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
Bromodichloromethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
1,2-Dichloropropane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
cis-1,3-Dichloropropene	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
Trichloroethene	ug/Kg	2 J	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	21 JK
Benzene	ug/Kg	ND 20	--	120 J	90 J	130 J	2800 J	230 J	200000 J
Dibromochloromethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
trans-1,3-Dichloropropene	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20	ND 12	ND 42 J
1,1,2-Trichloroethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
Bromoform	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
2-Hexanone	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
Tetrachloroethene	ug/Kg	20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	3 J	ND 210000 J
1,1,2,2-Tetrachloroethane	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
Toluene	ug/Kg	ND 20	--	11 J	ND 67 J	30000 J	11 K	ND 12	ND 210000 J
Chlorobenzene	ug/Kg	3 J	--	1300 J	660 J	130 J	300000	1500	2100000 J
Ethylbenzene	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
Styrene	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J
Xylenes (total)	ug/Kg	ND 20	--	ND 71 J	ND 67 J	ND 77 J	ND 20 J	ND 12	ND 210000 J

TCL Semi-volatiles

Phenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
--------	-------	--------	----	-----------	-----------	-----------	--------	--------	----------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (b)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SED-14	A-34S	C-21	C-21	C-21C	C-22	C-C20	C-C23
Sample Depth:	--	19-21 ft.	--	--	--	--	--	--
Sample Date:	08/06/1998	09/24/1998	01/13/1999	01/13/1999	01/13/1999	01/25/1999	01/26/1999	01/25/1999

Dupl.

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 200	--	ND 700 J	ND 680 J	ND 770 J	ND 94	ND 61	ND 210 J
2-Chlorophenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	700 J
1,3-Dichlorobenzene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	1200	270	7200 J
1,4-Dichlorobenzene	ug/Kg	310 J	--	450 J	260 J	ND 2500 J	6200	1200	140000 J
1,2-Dichlorobenzene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	550	920	99000 J
2-Methylphenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
4-Methylphenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
N-nitroso-di-n-propylamine	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Hexachloroethane	ug/Kg	93 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Nitrobenzene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Isophorone	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2-Nitrophenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,4-Dimethylphenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Bis(2-chloroethoxy)methane	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,4-Dichlorophenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
1,2,4-Trichlorobenzene	ug/Kg	140 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	41 J	2800 J
Naphthalene	ug/Kg	130 J	--	ND 2300 J	ND 2300 J	ND 2500 J	33 J	ND 200	270 J
4-Chloroaniline	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Hexachlorobutadiene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
4-Chloro-3-methylphenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2-Methylnaphthalene	ug/Kg	300 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Hexachlorocyclopentadiene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,4,6-Trichlorophenol	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,4,5-Trichlorophenol	ug/Kg	ND 1600	--	ND 5500 J	ND 5400 J	ND 6100 J	ND 750	ND 480	ND 1700 J
2-Chloronaphthalene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2-Nitroaniline	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
Dimethyl phthalate	ug/Kg	140 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Acenaphthylene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,6-Dinitrotoluene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
3-Nitroaniline	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
Acenaphthene	ug/Kg	74 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,4-Dinitrophenol	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
4-Nitrophenol	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
Dibenzofuran	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
2,4-Dinitrotoluene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Diethyl phthalate	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (c)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	SED-14	A-34S	C-21	C-21	C-21C	C-22	C-C20	C-C23
Sample Depth:	--	19-21 ft.	--	--	--	--	--	--
Sample Date:	08/06/1998	09/24/1998	01/13/1999	01/13/1999	01/13/1999	01/25/1999	01/26/1999	01/25/1999
				Dupl.				

Parameters

Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	120 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
4-Chlorophenyl phenylether	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
4-Nitroaniline	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
4,6-Dinitro-2-methylphenol	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
N-nitrosodiphenylamine	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
4-Bromophenyl phenylether	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Pentachlorophenol	ug/Kg	ND 1300	--	ND 4500 J	ND 4400 J	ND 5000 J	ND 610	ND 400	ND 1400 J
Phenanthrene	ug/Kg	550 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Anthracene	ug/Kg	96 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Carbazole	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Di-n-butyl phthalate	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Fluoranthene	ug/Kg	720	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Pyrene	ug/Kg	980	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Butylbenzylphthalate	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Benzo(a)anthracene	ug/Kg	180 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
3,3'-Dichlorobenzidine	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Chrysene	ug/Kg	550 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Bis(2-ethylhexyl)phthalate	ug/Kg	11000	--	340 J	ND 2300 J	1100 J	ND 310	ND 200	ND 690 J
Di-n-octyl phthalate	ug/Kg	420 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Benzo(b)fluoranthene	ug/Kg	340 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Benzo(k)fluoranthene	ug/Kg	270 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Benzo(a)pyrene	ug/Kg	180 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Indeno(1,2,3-cd)pyrene	ug/Kg	290 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Dibenz(a,h)anthracene	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
Benzo(g,h,i)perylene	ug/Kg	440 J	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
1,2-Diphenylhydrazine	ug/Kg	ND 670	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J

Hexachlorobenzene	ug/Kg	1100	--	ND 2300 J	ND 2300 J	ND 2500 J	ND 310	ND 200	ND 690 J
-------------------	-------	------	----	-----------	-----------	-----------	--------	--------	----------

TAL Metals

Aluminum	mg/Kg	16000 J	--	13000 J	17000 J	6500 J	3600 J	12000 J	28000 J
Antimony	mg/Kg	3.5 JL	--	ND 2.0 JL	ND 2.0 JL	ND 2.2 JL	ND 0.45 L	ND 0.35 L	ND 1.2 JL
Arsenic	mg/Kg	2.9 J	--	3.2 J	5.0 J	2.0 J	3.1	3.5	19 J
Barium	mg/Kg	160 J	--	87 J	110 J	77 J	23	42	100 J
Beryllium	mg/Kg	0.79 J	--	0.60 J	1.1 J	0.66 J	0.37 K	0.49 K	1.2 J
Cadmium	mg/Kg	6.8 J	--	ND 0.14 J	ND 0.14 J	ND 0.15 J	ND 0.078	ND 0.060	ND 0.21 J

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 4 (d)

Date Printed: May 12, 1999

Time Printed: 2:17 pm

Sample Location:		SED-14	A-34S	C-21	C-21	C-21C	C-22	C-C20	C-C23
Sample Depth:		--	19-21 ft.	--	--	--	--	--	--
Sample Date:		08/06/1998	09/24/1998	01/13/1999	01/13/1999	01/13/1999	01/25/1999	01/26/1999	01/25/1999
					Dupl.				
Parameters	Units								
TAL Metals (Cont'd)									
Calcium	mg/Kg	4500 J	--	3000 J	3400 J	3400 J	760 J	270 J	3400 J
Chromium	mg/Kg	110 J	--	33 J	39 J	16 J	8.7 J	15 J	62 J
Cobalt	mg/Kg	8.4 J	--	3.6 J	4.5 J	3.1 J	4.1	4.8	12 J
Copper	mg/Kg	60 JK	--	6.6 J	8.8 J	5.1 J	4.3	6.4	13 J
Iron	mg/Kg	25000 J	--	8800 J	10000 J	5400 J	3500	15000	36000 J
Lead	mg/Kg	86 J	--	7.0 J	9.3 J	3.5 J	4.6	6.2	16 J
Magnesium	mg/Kg	6400 J	--	2900 J	3400 J	1700 J	680 J	1300 J	6000 J
Manganese	mg/Kg	240 JK	--	250 J	340 J	340 J	130	120	190 J
Mercury	mg/Kg	78 J	ND 0.046	0.35 J	1.1 J	ND 0.29 J	1.9 K	ND 0.052	1.8 JK
Nickel	mg/Kg	69 J	--	13 J	17 J	12 J	6.0	8.1	24 J
Potassium	mg/Kg	7900 J	--	1900 J	2200 J	720 J	660	640	3600 J
Selenium	mg/Kg	ND 0.40	--	2.7 J	2.6 J	ND 1.8 J	1.0 B	0.49 B	2.7 B
Silver	mg/Kg	1.4 J	--	ND 0.41 JL	ND 0.41 JL	ND 0.45 JL	0.11 L	0.62 L	1.7 JL
Sodium	mg/Kg	1000 J	--	2600 J	2600 J	2500 J	2500	590	3000 J
Thallium	mg/Kg	0.46 J	--	ND 1.3 J	ND 1.3 J	ND 1.4 J	ND 0.19	ND 0.14	ND 0.50 J
Vanadium	mg/Kg	41 J	--	25 J	37 J	16 J	10	26	59 J
Zinc	mg/Kg	1600 J	--	26 J	44 J	13 J	30	23	70 J
Methyl mercury	ug/Kg	--	--	6.4 J	3.6 J	3.6 J	5.2	0.009	6.8 J
General Chemistry									
Ammonia	mg/Kg	--	--	100 J	120 J	160 J	34	ND 6.0	36 J
Sulfide	mg/Kg	--	--	ND 110 JL	160 JL	1000 JL	ND 25	ND 19	ND 66 JL
Coarse gravel (19.0 mm)	%	--	--	0.00 J	0.00 J	0.00 J	0.00	0.00	0.00
Fine gravel (4.75 mm)	%	--	--	5.4 J	1.0 J	5.2 J	0.00	0.00	0.00
Coarse sand (2.00 mm)	%	--	--	34 J	21 J	27 J	10	1.6	2.8 J
Medium sand (0.425 mm)	%	--	--	36 J	66 J	43 J	51	43	44 J
Fine sand (0.075 mm)	%	--	--	16 J	11 J	20 J	31	33	42 J
Silts/clays (<0.075 mm)	%	--	--	5.3 J	0.4 J	1.3 J	7.7	23	12
Total organic carbon (TOC)	mg/Kg	--	--	250000 J	160000 J	330000 J	44000	1000	93000 J

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (a)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

<i>Sample Location:</i>	C-C24	C-C25	S-C22	S-C24	SB-10	SB-11	SB-12	SB-13
<i>Sample Depth:</i>	--	--	--	--	2-4 ft.	6-8 ft.	12-14 ft.	0-2 ft.
<i>Sample Date:</i>	01/26/1999	01/25/1999	01/25/1999	01/26/1999	08/12/1998	08/13/1998	08/13/1998	08/18/1998

Parameters Units

TCL Volatiles

Chloromethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Bromomethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Vinyl chloride	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Chloroethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Methylene chloride	ug/Kg	ND 17 J	ND 53 J	4 B	ND 25	2 B	1 B	2 B	ND 12
Acetone	ug/Kg	30 J	160 J	41 J	47	41 B	24 B	30 B	13 B
Carbon disulfide	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,1-Dichloroethene	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,1-Dichloroethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,2-Dichloroethene (total)	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
2-Butanone (MEK)	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Chloroform	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,2-Dichloroethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,1,1-Trichloroethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Carbon tetrachloride	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Bromodichloromethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,2-Dichloropropane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
cis-1,3-Dichloropropene	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Trichloroethene	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Benzene	ug/Kg	7500 J	97 J	280 J	120	ND 11	ND 11	340 K	4 J
Dibromochloromethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
trans-1,3-Dichloropropene	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
1,1,2-Trichloroethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Bromoform	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
2-Hexanone	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Tetrachloroethene	ug/Kg	ND 17 J	21 J	ND 20 J	ND 25	13 B	6 B	17 B	5 B
1,1,2,2-Tetrachloroethane	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Toluene	ug/Kg	9 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	2 K	ND 12
Chlorobenzene	ug/Kg	890 J	21 J	130000 J	480	ND 11	ND 11	26000	120
Ethylbenzene	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Styrene	ug/Kg	ND 17 J	ND 53 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12
Xylenes (total)	ug/Kg	ND 17 J	15 J	ND 20 J	ND 25	ND 11	ND 11	ND 12	ND 12

TCL Semi-volatiles

Phenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
--------	-------	----------	----------	----------	--------	--------	--------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (b)
Date Printed: May 12, 1999
Time Printed: 2:17 pm

Sample Location:	C-C24	C-C25	S-C22	S-C24	SB-10	SB-11	SB-12	SB-13
Sample Depth:	--	--	--	--	2-4 ft.	6-8 ft.	12-14 ft.	0-2 ft.
Sample Date:	01/26/1999	01/25/1999	01/25/1999	01/26/1999	08/12/1998	08/13/1998	08/13/1998	08/18/1998

Parameters

Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 83 J	ND 260 J	ND 100 J	ND 130	ND 110	ND 110	ND 120	ND 120
2-Chlorophenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	360 J	ND 390
1,3-Dichlorobenzene	ug/Kg	ND 270 J	ND 850 J	2000 J	790	ND 370	ND 380	4800	2900
1,4-Dichlorobenzene	ug/Kg	ND 270 J	85 J	48000 J	5500	ND 370	ND 380	61000	45000
1,2-Dichlorobenzene	ug/Kg	ND 270 J	ND 850 J	18000 J	690	ND 370	ND 380	52000	21000 J
2-Methylphenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
4-Methylphenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
N-nitroso-di-n-propylamine	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Hexachloroethane	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Nitrobenzene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	100 J
Isophorone	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2-Nitrophenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,4-Dimethylphenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Bis(2-chloroethoxy)methane	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,4-Dichlorophenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	260 J	ND 390
1,2,4-Trichlorobenzene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	120 J	ND 370	ND 380	14000 J	130000
Naphthalene	ug/Kg	81 J	ND 850 J	64 J	58 J	ND 370	ND 380	140 J	ND 390
4-Chloroaniline	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Hexachlorobutadiene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
4-Chloro-3-methylphenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2-Methylnaphthalene	ug/Kg	31 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Hexachlorocyclopentadiene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,4,6-Trichlorophenol	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,4,5-Trichlorophenol	ug/Kg	ND 660 J	ND 2100 J	ND 810 J	ND 1000	ND 880	ND 910	ND 960	ND 940
2-Chloronaphthalene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2-Nitroaniline	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
Dimethyl phthalate	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Acenaphthylene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,6-Dinitrotoluene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
3-Nitroaniline	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
Acenaphthene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,4-Dinitrophenol	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
4-Nitrophenol	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
Dibenzofuran	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
2,4-Dinitrotoluene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Diethyl phthalate	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (c)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	C-C24	C-C25	S-C22	S-C24	SB-10	SB-11	SB-12	SB-13
Sample Depth:	--	--	--	--	2-4 ft.	6-8 ft.	12-14 ft.	0-2 ft.
Sample Date:	01/26/1999	01/25/1999	01/25/1999	01/26/1999	08/12/1998	08/13/1998	08/13/1998	08/18/1998

Parameters

Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
4-Chlorophenyl phenylether	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
4-Nitroaniline	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
4,6-Dinitro-2-methylphenol	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
N-nitrosodiphenylamine	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
4-Bromophenyl phenylether	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Pentachlorophenol	ug/Kg	ND 540 J	ND 1700 J	ND 660 J	ND 820	ND 720	ND 740	ND 790	ND 770
Phenanthrene	ug/Kg	53 J	ND 850 J	ND 340 J	72 J	59 J	ND 380	ND 400	ND 390
Anthracene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Carbazole	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Di-n-butyl phthalate	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Fluoranthene	ug/Kg	81 J	ND 850 J	ND 340 J	120 J	38 J	ND 380	ND 400	ND 390
Pyrene	ug/Kg	67 J	ND 850 J	ND 340 J	110 J	45 J	ND 380	ND 400	ND 390
Butylbenzylphthalate	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Benzo(a)anthracene	ug/Kg	48 J	ND 850 J	ND 340 J	67 J	ND 370	ND 380	ND 400	ND 390
3,3'-Dichlorobenzidine	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Chrysene	ug/Kg	61 J	ND 850 J	ND 340 J	82 J	41 J	ND 380	ND 400	ND 390
Bis(2-ethylhexyl)phthalate	ug/Kg	ND 270 J	ND 850 J	36 B	230 B	ND 370	170 J	2100	ND 390
Di-n-octyl phthalate	ug/Kg	ND 270 J	ND 850 J	ND 340 J	100 J	ND 370	ND 380	ND 400	ND 390
Benzo(b)fluoranthene	ug/Kg	44 J	ND 850 J	ND 340 J	92 J	ND 370	ND 380	ND 400	ND 390
Benzo(k)fluoranthene	ug/Kg	60 J	ND 850 J	ND 340 J	83 J	ND 370	ND 380	ND 400	ND 390
Benzo(a)pyrene	ug/Kg	66 J	ND 850 J	ND 340 J	81 J	ND 370	ND 380	ND 400	ND 390
Indeno(1,2,3-cd)pyrene	ug/Kg	32 J	ND 850 J	ND 340 J	50 J	ND 370	ND 380	ND 400	ND 390
Dibenz(a,h)anthracene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390
Benzo(g,h,i)perylene	ug/Kg	39 J	ND 850 J	ND 340 J	62 J	ND 370	ND 380	ND 400	ND 390
1,2-Diphenyl-hydrazine	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	ND 390

Hexachlorobenzene	ug/Kg	ND 270 J	ND 850 J	ND 340 J	ND 410	ND 370	ND 380	ND 400	92 J
-------------------	-------	----------	----------	----------	--------	--------	--------	--------	------

TAL Metals

Aluminum	mg/Kg	7400 J	23000 J	23000 J	24000 J	10000	7800	11000	18000
Antimony	mg/Kg	ND 0.47 JL	ND 1.5 JL	ND 0.59 JL	ND 0.72 L	0.6 L	ND 310 L	0.44 L	0.37 L
Arsenic	mg/Kg	9.9 J	33 J	13 J	23	5.8	2.3	5.9	5.4
Barium	mg/Kg	28 J	130 J	96 J	130	93	22	44	52
Beryllium	mg/Kg	0.66 JK	2.9 JK	1.3 J	1.5 K	0.8	0.33	0.59	0.73
Cadmium	mg/Kg	ND 0.082 J	ND 0.26 J	0.48 J	0.41	0.38	0.1	0.2	0.36

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 5 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	C-C24	C-C25	S-C22	S-C24	SB-10	SB-11	SB-12	SB-13
Sample Depth:	--	--	--	--	2-4 ft.	6-8 ft.	12-14 ft.	0-2 ft.
Sample Date:	01/26/1999	01/25/1999	01/25/1999	01/26/1999	08/12/1998	08/13/1998	08/13/1998	08/18/1998

Parameters

Units

TAL Metals (Cont'd)

Calcium	mg/Kg	1600 J	6400 J	2000 J	2300 J	18000	600	460	390
Chromium	mg/Kg	17 J	54 J	75 J	100 J	30	12	18	26
Cobalt	mg/Kg	14 J	28 J	16 J	20	7.5	4.3	8.5	7.3
Copper	mg/Kg	4.8 J	16 J	32 J	50	26	5.5	11	10
Iron	mg/Kg	15000 J	35000 J	25000 J	37000	18000	10000	16000	22000
Lead	mg/Kg	4.6 J	17 J	48 J	69	69	4.4	16	8.1
Magnesium	mg/Kg	2000 J	4800 J	5500 J	5400 J	7300	1200	1300	2700
Manganese	mg/Kg	88 J	1100 J	410 J	800	770	110	450	190
Mercury	mg/Kg	ND 0.078 J	ND 0.24 J	3.1 JK	24 K	0.082 J	2.7 J	0.38 J	ND 48 J
Nickel	mg/Kg	15 J	42 J	32 J	51	41	5.7	12	12
Potassium	mg/Kg	1600 J	1900 J	3600 J	3800	2700	1700	1200	1500
Selenium	mg/Kg	1.2 B	4.4 B	2.1 B	2.3 B	1.1	0.34 K	0.84 K	0.83 K
Silver	mg/Kg	0.77 JL	1.5 JL	1.2 JL	1.8 L	ND 60	ND 60	ND 60	ND 60
Sodium	mg/Kg	6400 J	4600 J	2800 J	5400	930	840	920	440
Thallium	mg/Kg	ND 0.20 J	ND 0.62 J	ND 0.24 J	ND 0.30	ND 180	ND 180	ND 180	ND 180
Vanadium	mg/Kg	18 J	62 J	53 J	120	34	20	36	42
Zinc	mg/Kg	38 J	150 J	300 J	290	88	15	41	33
Methyl mercury	ug/Kg	7.7 J	1.0 J	--	6.4	--	--	--	--

General Chemistry

Ammonia	mg/Kg	33 J	80 J	48 J	44	--	--	--	--
Sulfide	mg/Kg	ND 26 JL	ND 82 JL	ND 32 JL	ND 40	--	--	--	--
Coarse gravel (19.0 mm)	%	0.00 J	0.00 J	0.00 J	0.00	--	--	--	--
Fine gravel (4.75 mm)	%	0.00 J	0.00 J	0.00 J	0.00	--	--	--	--
Coarse sand (2.00 mm)	%	12 J	14 J	11 J	8.4	--	--	--	--
Medium sand (0.425 mm)	%	54 J	52 J	51 J	44	--	--	--	--
Fine sand (0.075 mm)	%	28 J	25 J	26 J	38	--	--	--	--
Silts/clays (<0.075 mm)	%	6.4 J	9.1 J	12 J	9.3	--	--	--	--
Total organic carbon (TOC)	mg/Kg	35000 J	320000 J	44000 J	49000	13000	1200	10000	2300

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	SS-11	SS-11A	SS-12	SS-12	SS-12A	SS-13	SS-14	SS-15
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/04/1998	08/04/1998

Dupl.

Parameters Units

TCL Volatiles

Chloromethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Bromomethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Vinyl chloride	ug/Kg	ND 10	ND 11	ND 10	4 J	6200	ND 10	ND 11	ND 12
Chloroethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Methylene chloride	ug/Kg	3 B	3 B	3 B	3 B	8 B	5 B	2 B	3 B
Acetone	ug/Kg	ND 10	ND 11	4 B	4 B	11 B	5 B	ND 11	ND 12
Carbon disulfide	ug/Kg	1 J	ND 11	ND 10	ND 10	ND 13	2 J	ND 11	ND 12
1,1-Dichloroethene	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
1,1-Dichloroethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
1,2-Dichloroethene (total)	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
2-Butanone (MEK)	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Chloroform	ug/Kg	ND 10	ND 11	ND 10	ND 10	83	ND 10	ND 11	ND 12
1,2-Dichloroethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	2 J	ND 10	ND 11	ND 12
1,1,1-Trichloroethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Carbon tetrachloride	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Bromodichloromethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
1,2-Dichloropropane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
cis-1,3-Dichloropropene	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Trichloroethene	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Benzene	ug/Kg	2 J	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Dibromochloromethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
trans-1,3-Dichloropropene	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
1,1,2-Trichloroethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Bromoform	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
2-Hexanone	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Tetrachloroethene	ug/Kg	5 J	ND 11	4 J	3 J	4 J	14	1 J	ND 12
1,1,2,2-Tetrachloroethane	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Toluene	ug/Kg	1 J	1 J	ND 10	ND 10	2 J	ND 10	ND 11	ND 12
Chlorobenzene	ug/Kg	18 J	4 J	4 J	2 J	4 J	2 J	ND 3	ND 4
Ethylbenzene	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Styrene	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12
Xylenes (total)	ug/Kg	ND 10	ND 11	ND 10	ND 10	ND 13	ND 10	ND 11	ND 12

TCL Semi-volatiles

Phenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
--------	-------	--------	--------	--------	--------	--------	--------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (b)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	SS-11	SS-11A	SS-12	SS-12	SS-12A	SS-13	SS-14	SS-15
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/04/1998	08/04/1998

Dupl.

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 100	ND 110	ND 100	ND 100	ND 130	ND 100	ND 110	ND 120
2-Chlorophenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
1,3-Dichlorobenzene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
1,4-Dichlorobenzene	ug/Kg	ND 330	ND 370	ND 330	ND 330	97 J	ND 340	ND 360	ND 410
1,2-Dichlorobenzene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2-Methylphenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
4-Methylphenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
N-nitroso-di-n-propylamine	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Hexachloroethane	ug/Kg	ND 330	ND 370	ND 330	ND 330	760	ND 340	ND 360	ND 410
Nitrobenzene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Isophorone	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2-Nitrophenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,4-Dimethylphenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Bis(2-chloroethoxy)methane	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,4-Dichlorophenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
1,2,4-Trichlorobenzene	ug/Kg	ND 330	ND 370	ND 330	ND 330	50 J	ND 340	ND 360	ND 410
Naphthalene	ug/Kg	ND 330	ND 370	ND 330	ND 330	54 J	ND 340	ND 360	ND 410
4-Chloroaniline	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Hexachlorobutadiene	ug/Kg	ND 330	ND 370	ND 330	ND 330	240 J	ND 340	ND 360	ND 410
4-Chloro-3-methylphenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2-Methylnaphthalene	ug/Kg	ND 330	ND 370	ND 330	ND 330	110 J	ND 340	ND 360	ND 410
Hexachlorocyclopentadiene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,4,6-Trichlorophenol	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,4,5-Trichlorophenol	ug/Kg	ND 800	ND 880	ND 800	ND 800	ND 1100	ND 830	ND 860	ND 990
2-Chloronaphthalene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2-Nitroaniline	ug/Kg	ND 660	ND 720	ND 660	ND 660	ND 870	ND 680	ND 710	ND 810
Dimethyl phthalate	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Acenaphthylene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,6-Dinitrotoluene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
3-Nitroaniline	ug/Kg	ND 660	ND 720	ND 660	ND 660	ND 870	ND 680	ND 710	ND 810
Acenaphthene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,4-Dinitrophenol	ug/Kg	ND 660	ND 720	ND 660	ND 660	ND 870	ND 680	ND 710	ND 810
4-Nitrophenol	ug/Kg	ND 660	ND 720	ND 660	ND 660	ND 870	ND 680	ND 710	ND 810
Dibenzofuran	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
2,4-Dinitrotoluene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Diethyl phthalate	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (c)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

<i>Sample Location:</i>	SS-11	SS-11A	SS-12	SS-12	SS-12A	SS-13	SS-14	SS-15
<i>Sample Depth:</i>	--	--	--	--	--	--	--	--
<i>Sample Date:</i>	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/04/1998	08/04/1998

Dupl.

Parameters

Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
4-Chlorophenyl phenylether	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
4-Nitroaniline	ug/Kg	ND 660	ND 720	ND 660	ND 660	ND 870	ND 680	ND 710	ND 810
4,6-Dinitro-2-methylphenol	ug/Kg	ND 660	ND 720	ND 660	ND 660	ND 870	ND 680	ND 710	ND 810
N-nitrosodiphenylamine	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
4-Bromophenyl phenylether	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Pentachlorophenol	ug/Kg	ND 660	ND 720	ND 660	ND 660	100 J	ND 680	ND 710	ND 810
Phenanthrene	ug/Kg	ND 330	ND 370	ND 330	ND 330	140 J	ND 340	ND 360	ND 410
Anthracene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Carbazole	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Di-n-butyl phthalate	ug/Kg	83 J	ND 370	84 J	83 J	110 J	ND 340	ND 360	ND 410
Fluoranthene	ug/Kg	ND 330	ND 370	ND 330	ND 330	68 J	40 J	ND 36	ND 410
Pyrene	ug/Kg	37 J	ND 370	ND 330	43 J	140 J	39 J	36 J	ND 410
Burylbenzylphthalate	ug/Kg	330 J	ND 370	300 J	330	ND 440	ND 340	ND 360	ND 410
Benzo(a)anthracene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
3,3'-Dichlorobenzidine	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Chrysene	ug/Kg	ND 330	ND 370	ND 330	ND 330	49 J	ND 340	ND 360	ND 410
Bis(2-ethylhexyl)phthalate	ug/Kg	380	430	360	370	2500 J	860	1300	370 J
Di-n-octyl phthalate	ug/Kg	ND 330	110 J	ND 330	ND 330	360 J	130 J	260 J	43 J
Benzo(b)fluoranthene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440 J	ND 340	ND 360	ND 410
Benzo(k)fluoranthene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440 J	ND 340	ND 360	ND 410
Benzo(a)pyrene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440 J	ND 340	ND 360	ND 410
Indeno(1,2,3-cd)pyrene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440 J	ND 340	ND 360	ND 410
Dibenz(a,h)anthracene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440 J	ND 340	ND 360	ND 410
Benzo(g,h,i)perylene	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440 J	ND 340	ND 360	ND 410
1,2-Diphenyl-hydrazine	ug/Kg	ND 330	ND 370	ND 330	ND 330	ND 440	ND 340	ND 360	ND 410
Hexachlorobenzene	ug/Kg	ND 330	ND 370	ND 330	ND 330	210 J	ND 340	ND 360	ND 410

TAL Metals

Aluminum	mg/Kg	41000	9000	44000	49000	3000	2500	8500	1400
Antimony	mg/Kg	R	0.43 JL	R	R	R	R	R	R
Arsenic	mg/Kg	ND 2.8	3.2	7.7	5.7	2.8	1.3	4.1	1.2
Barium	mg/Kg	870	42	930	1200	47	12	28	11
Beryllium	mg/Kg	140	0.55	150	170	0.81	0.23	0.44	ND 0.16
Cadmium	mg/Kg	38 J	0.052 B	22 J	92 J	0.61 J	0.034 B	ND 0.033	0.079 B

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 6 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	SS-11	SS-11A	SS-12	SS-12	SS-12A	SS-13	SS-14	SS-15
Sample Depth:	--	--	--	--	--	--	--	--
Sample Date:	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/05/1998	08/04/1998	08/04/1998	08/04/1998

Dupl.

Parameters Units

TAL Metals (Cont'd)

Calcium	mg/Kg	62000	640	68000	75000	310000	470	600	350
Chromium	mg/Kg	220 J	22 J	210 J	420 J	9.4 J	6.1	18	4.8
Cobalt	mg/Kg	210	7.8	260	270	3.5	2.7	5.8	2.9
Copper	mg/Kg	16000	12	27000	20000	94	4.5	8.0	4.5
Iron	mg/Kg	220000	15000	240000	270000	9300	5700	16000	5600
Lead	mg/Kg	7000	7.3	7100	8400	51	5.4	7.9	3.7
Magnesium	mg/Kg	13000	910	14000	15000	7800	350	1200	230
Manganese	mg/Kg	4000	140	4600	5000	100	91	180	180
Mercury	mg/Kg	8.6 J	3.4 J	41 J	98 J	430 J	2.6 J	3.2 J	0.42 J
Nickel	mg/Kg	1700	8.7	1900	2000	15	3.4	7.7	2.7
Potassium	mg/Kg	2400	1000	2700	2900	760	240	800	160
Selenium	mg/Kg	5.7 J	0.64 J	13 J	18 J	ND 0.26 J	0.28 J	0.62 J	0.38 JK
Silver	mg/Kg	6.4 JK	0.18 JK	12 JK	9.2 JK	ND 0.080 J	0.14 JK	0.26 JK	0.20 JK
Sodium	mg/Kg	9700	1600	11000	12000	4300	17 B	35	75
Thallium	mg/Kg	ND 3.6	0.33 K	ND 3.6	ND 3.6	0.32 K	ND 0.19	0.53 K	ND 0.22
Vanadium	mg/Kg	34 J	25 J	34 J	41 J	5.8 J	11 J	28 J	7.9 J
Zinc	mg/Kg	59000	33	64000	66000	400	24	26	31
Methyl mercury	ug/Kg	--	--	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	--	--	--	--	--	--	--	--
Sulfide	mg/Kg	--	--	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	--	--	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	--	--	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	--	--	--	--	--	--	--	--
Medium sand (0.425 mm)	%	--	--	--	--	--	--	--	--
Fine sand (0.075 mm)	%	--	--	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	--	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	13000	2000	16000	14000	50000	4800	6600	530

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	SS-16	SS-17	SS-18	WB-14	WB-15	WB-16	WB-16	WB-17
Sample Depth:	--	--	--	6-8 ft.	8-10 ft.	6-8 ft.	6-8 ft.	0-2 ft.
Sample Date:	08/04/1998	08/04/1998	08/04/1998	08/19/1998	08/25/1998	08/19/1998	08/19/1998	08/19/1998
							Dupl.	

Parameters

Units

TCL Volatiles

Chloromethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Bromomethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Vinyl chloride	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Chloroethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Methylene chloride	ug/Kg	1 B	3 B	3 B	5 B	15 B	2 B	2 B	2 B
Acetone	ug/Kg	ND 11	ND 11	3 B	39 B	82	33 B	ND 17	12 B
Carbon disulfide	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,1-Dichloroethene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,1-Dichloroethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,2-Dichloroethene (total)	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
2-Butanone (MEK)	ug/Kg	ND 11	ND 11	ND 11	ND 19	31 J	ND 17	ND 17	ND 11
Chloroform	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,2-Dichloroethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,1,1-Trichloroethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Carbon tetrachloride	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Bromodichloromethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,2-Dichloropropane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
cis-1,3-Dichloropropene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Trichloroethene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
Benzene	ug/Kg	ND 11	ND 11	ND 11	9 J	ND 22	5800 J	30000 J	ND 11
Dibromochloromethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
trans-1,3-Dichloropropene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 17	ND 17	ND 11
1,1,2-Trichloroethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
Bromoform	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
2-Hexanone	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
Tetrachloroethene	ug/Kg	ND 11	1 J	5 J	29 J	ND 22	ND 18000	ND 21000	9 B
1,1,2,2-Tetrachloroethane	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
Toluene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
Chlorobenzene	ug/Kg	ND 3	ND 3	ND 3	37	ND 22	93000 J	430000 J	4 B
Ethylbenzene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
Styrene	ug/Kg	ND 11	ND 11	ND 11	ND 19	ND 22	ND 18000	ND 21000	ND 11
Xylenes (total)	ug/Kg	ND 11	ND 11	ND 11	3 J	6 J	ND 18000	ND 21000	ND 11

TCL Semi-volatiles

Phenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	710	ND 370
--------	-------	--------	--------	--------	--------	----------	--------	-----	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (b)

Date Printed: May 12, 1999

Time Printed: 2:18 pm

Sample Location:	SS-16	SS-17	SS-18	WB-14	WB-15	WB-16	WB-16	WB-17
Sample Depth:	--	--	--	6-8 ft.	8-10 ft.	6-8 ft.	6-8 ft.	0-2 ft.
Sample Date:	08/04/1998	08/04/1998	08/04/1998	08/19/1998	08/25/1998	08/19/1998	08/19/1998	08/19/1998

Dupl.

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 110	ND 110	ND 110	ND 190	ND 170 J	ND 170	ND 170	ND 110
2-Chlorophenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	1100	840	ND 370
1,3-Dichlorobenzene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	6900 J	2900 J	ND 370
1,4-Dichlorobenzene	ug/Kg	ND 360	120 J	ND 360	190 J	300 J	120000 J	51000 J	ND 370
1,2-Dichlorobenzene	ug/Kg	ND 360	150 J	ND 360	120 J	140 J	110000 J	46000 J	ND 370
2-Methylphenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 510	ND 560	ND 370
4-Methylphenol	ug/Kg	ND 360	ND 370	ND 360	200 J	240 J	210 J	150 J	ND 370
N-nitroso-di-n-propylamine	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Hexachloroethane	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Nitrobenzene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Isophorone	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2-Nitrophenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,4-Dimethylphenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Bis(2-chloroethoxy)methane	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,4-Dichlorophenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	140 J	110 J	ND 370
1,2,4-Trichlorobenzene	ug/Kg	ND 360	45 J	ND 360	63 J	ND 570 J	52000 J	20000 J	ND 370
Naphthalene	ug/Kg	ND 360	ND 370	ND 360	140 J	460 J	570	500 J	ND 370
4-Chloroaniline	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Hexachlorobutadiene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
4-Chloro-3-methylphenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2-Methylnaphthalene	ug/Kg	ND 360	65 J	ND 360	950	2300 J	ND 550	ND 560	ND 370
Hexachlorocyclopentadiene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,4,6-Trichlorophenol	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,4,5-Trichlorophenol	ug/Kg	ND 860	ND 880	ND 870	ND 1500	ND 1400 J	ND 1300	ND 1400	ND 890
2-Chloronaphthalene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2-Nitroaniline	ug/Kg	ND 700	ND 720	ND 710	ND 1200	ND 1100 J	ND 1100	ND 1100	ND 730
Dimethyl phthalate	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Acenaphthylene	ug/Kg	ND 360	ND 720	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,6-Dinitrotoluene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
3-Nitroaniline	ug/Kg	ND 700	ND 720	ND 710	ND 1200	ND 1100 J	ND 1100	ND 1100	ND 730
Acenaphthene	ug/Kg	ND 360	ND 370	ND 360	79 J	220 J	ND 550	ND 560	ND 370
2,4-Dinitrophenol	ug/Kg	ND 700	ND 720	ND 710	ND 1200 J	ND 1100 J	ND 1100 J	ND 1100 J	ND 730 J
4-Nitrophenol	ug/Kg	ND 700	ND 720	ND 710	ND 1200	ND 1100 J	ND 1100	ND 1100	ND 730
Dibenzofuran	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
2,4-Dinitrotoluene	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Diethyl phthalate	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (c)

Date Printed: May 12, 1999

Time Printed: 2:18 pm

Sample Location:		SS-16	SS-17	SS-18	WB-14	WB-15	WB-16	WB-16	WB-17
Sample Depth:		--	--	--	6-8 ft.	8-10 ft.	6-8 ft.	6-8 ft.	0-2 ft.
Sample Date:		08/04/1998	08/04/1998	08/04/1998	08/19/1998	08/25/1998	08/19/1998	08/19/1998	08/19/1998
		Dupl.							
Parameters	Units								
TCL Semi-volatiles (Cont'd)									
Fluorene	ug/Kg	ND 360	ND 370	ND 360	89 J	330 J	ND 550	ND 560	ND 370
4-Chlorophenyl phenylether	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
4-Nitroaniline	ug/Kg	ND 700	ND 720	ND 710	ND 1200	ND 1100 J	ND 1100	ND 1100	ND 730
4,6-Dinitro-2-methylphenol	ug/Kg	ND 700	ND 720	ND 710	ND 1200	ND 1100 J	ND 1100	ND 1100	ND 730
N-nitrosodiphenylamine	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
4-Bromophenyl phenylether	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Pentachlorophenol	ug/Kg	ND 700	ND 720	ND 710	ND 1200	ND 1100 J	ND 1100	ND 1100	ND 730 J
Phenanthrene	ug/Kg	ND 360	71 J	ND 360	330 J	1000 J	66 J	73 J	ND 370
Anthracene	ug/Kg	ND 360	ND 370	ND 360	72 J	210 J	ND 550	ND 560	ND 370
Carbazole	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Di-n-butyl phthalate	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Fluoranthene	ug/Kg	ND 360	40 J	ND 360	120 J	320 J	66 J	72 J	44 J
Pyrene	ug/Kg	ND 360	44 J	ND 360	150 J	530 J	67 J	82 J	71 J
Butylbenzylphthalate	ug/Kg	ND 360	65 J	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Benzo(a)anthracene	ug/Kg	ND 360	ND 370	ND 360	ND 610	250 J	ND 550	ND 560	ND 370
3,3'-Dichlorobenzidine	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Chrysene	ug/Kg	ND 360	ND 370	ND 360	96 J	290 J	ND 550	57 J	49 J
Bis(2-ethylhexyl)phthalate	ug/Kg	170 J	1900	ND 360	ND 610	510 B	ND 550	ND 560	ND 370
Di-n-octyl phthalate	ug/Kg	ND 360	360 J	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Benzo(b)fluoranthene	ug/Kg	ND 360	ND 370	ND 360	ND 610	140 J	ND 550	ND 560	ND 370
Benzo(k)fluoranthene	ug/Kg	ND 360	ND 370	ND 360	ND 610	200 J	ND 550	ND 560	41 J
Benzo(a)pyrene	ug/Kg	ND 360	ND 370	ND 360	ND 610	190 J	ND 550	ND 560	49 J
Indeno(1,2,3-cd)pyrene	ug/Kg	ND 360	ND 370	ND 360	ND 610	140 J	ND 550	ND 560	ND 370
Dibenz(a,h)anthracene	ug/Kg	ND 360	ND 370	ND 360	ND 610	89 J	ND 550	ND 560	ND 370
Benzo(g,h,i)perylene	ug/Kg	ND 360	ND 370	ND 360	ND 610	240 J	ND 550	ND 560	46 J
1,2-Diphenyl-hydrazine	ug/Kg	ND 360	ND 370	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
Hexachlorobenzene	ug/Kg	ND 360	200 J	ND 360	ND 610	ND 570 J	ND 550	ND 560	ND 370
TAL Metals									
Aluminum	mg/Kg	7300	4700	15000	16000 J	18000 J	17000	14000 J	15000
Antimony	mg/Kg	R	R	R	1.8 L	1.8 L	3.3 L	2.4 L	ND 0.34 L
Arsenic	mg/Kg	3.0	1.6	6.3	27 J	31 J	24	17 J	3.1
Barium	mg/Kg	34	100	39	77	85	1300	1000	57
Beryllium	mg/Kg	0.41	0.30	0.54	1.5	1.9	1.3	1.3	0.53
Cadmium	mg/Kg	ND 0.033	0.18 B	ND 0.034	0.76	0.92	1.7	ND 0.053	0.14

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 7 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	SS-16	SS-17	SS-18	WB-14	WB-15	WB-16	WB-16	WB-17
Sample Depth:	--	--	--	6-8 ft.	8-10 ft.	6-8 ft.	6-8 ft.	0-2 ft.
Sample Date:	08/04/1998	08/04/1998	08/04/1998	08/19/1998	08/25/1998	08/19/1998	08/19/1998	08/19/1998
							Dupl.	

Parameters

Units

TAL Metals (Cont'd)

Calcium	mg/Kg	530	1900	720	2800 J	3100 J	12000	8900 J	530
Chromium	mg/Kg	13	9.5	25	96 J	110 J	120	120 J	18
Cobalt	mg/Kg	13	3.5	9.1	21	24	17	15	3.3
Copper	mg/Kg	6.4	7.6	11	75	88	67	65	6.8
Iron	mg/Kg	14000	10000	27000	36000 J	41000 J	32000	32000 J	11000
Lead	mg/Kg	10	4.5	16	160 JL	190 JL	130	140 JL	11
Magnesium	mg/Kg	720	610	1700	6000 J	6700 J	6200	5600 J	1000
Manganese	mg/Kg	420	180	230	1100 J	1300 J	870	650 J	41
Mercury	mg/Kg	0.94 J	3.0 J	0.31 J	1.7 L	3.7	350 J	4500 JL	8.0 J
Nickel	mg/Kg	6.0	7.2	12	35 J	41 J	30	27 J	6.7
Potassium	mg/Kg	460	420	1000	2400	2800	3300	2700	540
Selenium	mg/Kg	0.61 J	0.40 J	0.95 J	2.7 L	3.3 L	2.6	2.3 L	0.29 K
Silver	mg/Kg	0.35 JK	0.13 JK	0.81 JK	1.6	1.7	0.88 J	1.7 J	ND 0.067
Sodium	mg/Kg	20 B	79	28 B	2600	3700	4800	4900	62
Thallium	mg/Kg	ND 0.19	0.33 K	ND 0.19	0.93	1.0	ND 0.30	0.65	ND 0.20
Vanadium	mg/Kg	22 J	14 J	42 J	70 J	80 J	65	62 J	28
Zinc	mg/Kg	20	35	34	420 J	480 J	420	340 J	22
Methyl mercury	ug/Kg	--	--	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	--	--	--	--	--	--	--	--
Sulfide	mg/Kg	--	--	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	--	--	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	--	--	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	--	--	--	--	--	--	--	--
Medium sand (0.425 mm)	%	--	--	--	--	--	--	--	--
Fine sand (0.075 mm)	%	--	--	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	--	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	11000	1700	5700	50000 K	46000 K	46000	46000 K	4200

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

<i>Sample Location:</i>	WB-17	WB-18	WB-18	WB-19	WB-19	WB-19	WB-20	WB-21
<i>Sample Depth:</i>	6-8 ft.	0-2 ft.	8-10 ft.	0-2 ft.	8-10 ft.	8-10 ft.	8-10 ft.	6-8 ft.
<i>Sample Date:</i>	08/19/1998	08/18/1998	08/18/1998	08/20/1998	08/20/1998	08/20/1998	08/24/1998	08/24/1998

Dupl.

Parameters Units

TCL Volatiles

Chloromethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Bromomethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Vinyl chloride	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Chloroethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Methylene chloride	ug/Kg	7 B	ND 11	ND 14	3 B	3 B	4 B	10 B	18 B
Acetone	ug/Kg	44 B	ND 11	30 B	ND 11	27 B	27 B	30	39
Carbon disulfide	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,1-Dichloroethene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,1-Dichloroethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,2-Dichloroethene (total)	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
2-Butanone (MEK)	ug/Kg	17 J	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Chloroform	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,2-Dichloroethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,1,1-Trichloroethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Carbon tetrachloride	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Bromodichloromethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,2-Dichloropropane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
cis-1,3-Dichloropropene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Trichloroethene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Benzene	ug/Kg	5 J	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Dibromochloromethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
trans-1,3-Dichloropropene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
1,1,2-Trichloroethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Bromoform	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
2-Hexanone	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Tetrachloroethene	ug/Kg	13 B	12 J	6 B	4 B	ND 17	5 B	ND 16	ND 21
1,1,2,2-Tetrachloroethane	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Toluene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Chlorobenzene	ug/Kg	72	ND 11	2 J	3 B	4 B	5 B	ND 16	3 B
Ethylbenzene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Styrene	ug/Kg	ND 18	ND 11	ND 14	ND 11	ND 17	ND 18	ND 16	ND 21
Xylenes (total)	ug/Kg	5 J	ND 11	2 J	ND 11	5 J	8 J	ND 16	ND 21

TCL Semi-volatiles

Phenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
--------	-------	--------	--------	--------	--------	--------	--------	----------	----------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (b)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

<i>Sample Location:</i>	WB-17	WB-18	WB-18	WB-19	WB-19	WB-19	WB-20	WB-21
<i>Sample Depth:</i>	6-8 ft.	0-2 ft.	8-10 ft.	0-2 ft.	8-10 ft.	8-10 ft.	8-10 ft.	6-8 ft.
<i>Sample Date:</i>	08/19/1998	08/18/1998	08/18/1998	08/20/1998	08/20/1998	08/20/1998	08/24/1998	08/24/1998

Dupl.

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl) ether	ug/Kg	ND 180	ND 110	ND 150	ND 110	ND 170	ND 180	ND 160 J	ND 180 J
2-Chlorophenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
1,3-Dichlorobenzene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
1,4-Dichlorobenzene	ug/Kg	190 J	ND 370	170 J	95 J	61 J	89 J	200 J	110 J
1,2-Dichlorobenzene	ug/Kg	65 J	230 J	61 J	240 J	ND 570	73 J	140 J	95 J
2-Methylphenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
4-Methylphenol	ug/Kg	150 J	ND 370	ND 480	ND 380	160 J	150 J	250 J	220 J
N-nitroso-di-n-propylamine	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Hexachloroethane	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Nitrobenzene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Isophorone	ug/Kg	ND 610	ND 370	ND 480	72 J	ND 570	ND 590	ND 530 J	ND 580 J
2-Nitrophenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,4-Dimethylphenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Bis(2-chloroethoxy)methane	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,4-Dichlorophenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
1,2,4-Trichlorobenzene	ug/Kg	ND 610	300 J	ND 480	1100	ND 570	ND 590	53 J	ND 580 J
Naphthalene	ug/Kg	88 J	ND 370	66 J	ND 380	130 J	210 J	260 J	260 J
4-Chloroaniline	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Hexachlorobutadiene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
4-Chloro-3-methylphenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2-Methylnaphthalene	ug/Kg	550 J	ND 370	62 J	ND 380	410 J	720	730 J	290 J
Hexachlorocyclopentadiene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,4,6-Trichlorophenol	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,4,5-Trichlorophenol	ug/Kg	ND 1500	ND 880	ND 1200	ND 910	ND 1400	ND 1400	ND 1300 J	ND 1400 J
2-Chloronaphthalene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2-Nitroaniline	ug/Kg	ND 1200	ND 720	ND 950	ND 740	ND 1100	ND 1200	ND 1000 J	ND 1100 J
Dimethyl phthalate	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Acenaphthylene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,6-Dinitrotoluene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
3-Nitroaniline	ug/Kg	ND 1200	ND 720	ND 950	ND 740	ND 1100	ND 1200	ND 1000 J	ND 1100 J
Acenaphthene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	96 J	73 J	ND 580 J
2,4-Dinitrophenol	ug/Kg	ND 1200 J	ND 720	ND 950	ND 740 J	ND 1100 J	ND 1200 J	ND 1000 J	ND 1100 J
4-Nitrophenol	ug/Kg	ND 1200	ND 720	ND 950	ND 740	ND 1100	ND 1200	ND 1000 J	ND 1100 J
Dibenzofuran	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
2,4-Dinitrotoluene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Diethyl phthalate	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (c)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

<i>Sample Location:</i>	WB-17	WB-18	WB-18	WB-19	WB-19	WB-19	WB-20	WB-21
<i>Sample Depth:</i>	6-8 ft.	0-2 ft.	8-10 ft.	0-2 ft.	8-10 ft.	8-10 ft.	8-10 ft.	6-8 ft.
<i>Sample Date:</i>	08/19/1998	08/18/1998	08/18/1998	08/20/1998	08/20/1998	08/20/1998	08/24/1998	08/24/1998

Dupl.

Parameters Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 610	ND 370	ND 480	ND 380	59 J	130 J	140 J	68 J
4-Chlorophenyl phenylether	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
4-Nitroaniline	ug/Kg	ND 1200	ND 720	ND 950	ND 740	ND 1100	ND 1200	ND 1000 J	ND 1100 J
4,6-Dinitro-2-methylphenol	ug/Kg	ND 1200	ND 720	ND 950	ND 740	ND 1100	ND 1200	ND 1000 J	ND 1100 J
N-nitrosodiphenylamine	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
4-Bromophenyl phenylether	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Pentachlorophenol	ug/Kg	ND 1200	ND 720	ND 950	ND 740	ND 1100	ND 1200	ND 1000 J	ND 1100 J
Phenanthrene	ug/Kg	190 J	76 J	89 J	ND 380	180 J	430 J	400 J	180 J
Anthracene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	100 J	98 J	110 J
Carbazole	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Di-n-butyl phthalate	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Fluoranthene	ug/Kg	68 J	ND 370	89 J	ND 380	75 J	210 J	190 J	220 J
Pyrene	ug/Kg	85 J	82 J	120 J	ND 380	98 J	310 J	300 J	360 J
Burylbenzylphthalate	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Benzo(a)anthracene	ug/Kg	ND 610	ND 370	70 J	ND 380	ND 570	140 J	130 J	170 J
3,3'-Dichlorobenzidine	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Chrysene	ug/Kg	ND 610	40 J	87 J	ND 380	63 J	180 J	170 J	190 J
Bis(2-ethylhexyl)phthalate	ug/Kg	ND 610	580	ND 1100	430	ND 570	460 B	ND 530 J	330 B
Di-n-octyl phthalate	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
Benzo(b)fluoranthene	ug/Kg	ND 610	ND 370	56 J	ND 380	ND 570	97 J	130 J	130 J
Benzo(k)fluoranthene	ug/Kg	ND 610	ND 370	77 J	ND 380	ND 570	130 J	91 J	100 J
Benzo(a)pyrene	ug/Kg	ND 610	ND 370	210 J	ND 380	ND 570	130 J	130 J	130 J
Indeno(1,2,3-cd)pyrene	ug/Kg	ND 610	ND 370	57 J	ND 380	ND 570	82 J	92 J	120 J
Dibenz(a,h)anthracene	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	56 J	ND 580 J
Benzo(g,h,i)perylene	ug/Kg	ND 610	ND 370	75 J	ND 380	ND 570	110 J	140 J	160 J
1,2-Diphenyl-hydrazine	ug/Kg	ND 610	ND 370	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J

Hexachlorobenzene	ug/Kg	ND 610	51 J	ND 480	ND 380	ND 570	ND 590	ND 530 J	ND 580 J
-------------------	-------	--------	------	--------	--------	--------	--------	----------	----------

TAL Metals

Aluminum	mg/Kg	17000 J	11000	16000	9300 J	17000 J	16000 J	14000 J	15000 J
Antimony	mg/Kg	2.1 L	0.59 L	1.8 L	0.57 L	1.8 L	1.8 L	1.3 L	1.2 L
Arsenic	mg/Kg	27 J	6.6	16	5.0 J	26 J	24 J	24 J	26 J
Barium	mg/Kg	82	81	63	55	80	73	72	74
Beryllium	mg/Kg	1.7	0.68	1.1	0.71	1.5	1.4	1.3	1.5
Cadmium	mg/Kg	1.2	0.36	1.1	ND 0.035	0.59	0.45	0.73	0.62

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 8 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

<i>Sample Location:</i>	WB-17	WB-18	WB-18	WB-19	WB-19	WB-19	WB-20	WB-21
<i>Sample Depth:</i>	6-8 ft.	0-2 ft.	8-10 ft.	0-2 ft.	8-10 ft.	8-10 ft.	8-10 ft.	6-8 ft.
<i>Sample Date:</i>	08/19/1998	08/18/1998	08/18/1998	08/20/1998	08/20/1998	08/20/1998	08/24/1998	08/24/1998

Dupl.

Parameters Units

TAL Metals (Cont'd)

Calcium	mg/Kg	2400 J	800	2300	920 J	2600 J	2500 J	2700 J	2300 J
Chromium	mg/Kg	100 J	25	65	30 J	98 J	90 J	87 J	92 J
Cobalt	mg/Kg	21	6.9	16	7.1	20	18	19	22
Copper	mg/Kg	83	11	38	16	74	66	67	70
Iron	mg/Kg	37000 J	21000	27000	19000 J	38000 J	35000 J	33000 J	36000 J
Lead	mg/Kg	170 JL	15	98	14 JL	160 JL	140 J	140 JL	150 JL
Magnesium	mg/Kg	5800 J	1700	4800	2000 J	6100 J	5700 J	5500 J	5000 J
Manganese	mg/Kg	670 J	210	1000	150 J	950 J	870 J	1100 J	1300 J
Mercury	mg/Kg	70 L	4.6 J	25 J	1.8	4.7	3.2	7.6	1.1
Nickel	mg/Kg	38 J	11	27	12 J	36 J	33 J	32 J	36 J
Potassium	mg/Kg	3100	1000	3100	1200	3400	3300	2300	4700
Selenium	mg/Kg	2.4 L	1.0 K	2.1	0.52 J	2.4 L	2.4 L	2.7 L	2.6 L
Silver	mg/Kg	1.3	ND 0.067	ND 0.088	0.36 B	1.4	1.3	1.2	1.3
Sodium	mg/Kg	4000	55	2300	990	5600	5200	3400	4200
Thallium	mg/Kg	0.90	ND 0.20	ND 0.26	0.26	0.86 J	0.52 J	0.80	0.81
Vanadium	mg/Kg	75	34	57	35 J	74 J	67 J	61 J	68 J
Zinc	mg/Kg	440 J	50	240	49 J	410 J	360 J	380 J	400 J
Methyl mercury	ug/Kg	--	--	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	--	--	--	--	--	--	--	--
Sulfide	mg/Kg	--	--	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	--	--	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	--	--	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	--	--	--	--	--	--	--	--
Medium sand (0.425 mm)	%	--	--	--	--	--	--	--	--
Fine sand (0.075 mm)	%	--	--	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	--	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	44000 K	5700	12000	6400 K	53000 K	58000 K	34000 J	37000 J

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

<i>Sample Location:</i>	WB-22	WB-23	WB-24	WB-25	WB-26	WB-26	WB-27	WB-27
<i>Sample Depth:</i>	2-4 ft.	4-6 ft.	4-6 ft.	4-6 ft.	0-2 ft.	6-8 ft.	0-2 ft.	6-8 ft.
<i>Sample Date:</i>	08/19/1998	08/20/1998	08/24/1998	08/24/1998	08/20/1998	08/20/1998	08/17/1998	08/17/1998

Parameters

Units

TCL Volatiles

Chloromethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Bromomethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Vinyl chloride	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Chloroethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Methylene chloride	ug/Kg	2 B	2 B	13 B	10 B	6 B	5 B	1 B	ND 15
Acetone	ug/Kg	8 B	24 B	46	23	ND 11	31 B	11 B	35 B
Carbon disulfide	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,1-Dichloroethene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,1-Dichloroethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,2-Dichloroethene (total)	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
2-Butanone (MEK)	ug/Kg	ND 11	ND 18	15 J	ND 14	ND 11	ND 17	ND 11	ND 15
Chloroform	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,2-Dichloroethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,1,1-Trichloroethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Carbon tetrachloride	ug/Kg	ND 11	ND 18 J	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Bromodichloromethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,2-Dichloropropane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
cis-1,3-Dichloropropene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Trichloroethene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Benzene	ug/Kg	ND 11	ND 18 J	ND 15	11 J	ND 11	ND 17	ND 11	ND 15
Dibromochloromethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
trans-1,3-Dichloropropene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
1,1,2-Trichloroethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Bromoform	ug/Kg	ND 11	ND 18 J	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
2-Hexanone	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Tetrachloroethene	ug/Kg	9 B	ND 18	2 B	6 B	11 B	18 J	6 B	4 B
1,1,2,2-Tetrachloroethane	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Toluene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Chlorobenzene	ug/Kg	3 B	4 B	4 B	47	2 B	4 B	3 J	8 J
Ethylbenzene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Styrene	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15
Xylenes (total)	ug/Kg	ND 11	ND 18	ND 15	ND 14	ND 11	ND 17	ND 11	ND 15

TCL Semi-volatiles

Phenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
--------	-------	---------	--------	----------	----------	--------	--------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (b)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-22	WB-23	WB-24	WB-25	WB-26	WB-26	WB-27	WB-27
Sample Depth:	2-4 ft.	4-6 ft.	4-6 ft.	4-6 ft.	0-2 ft.	6-8 ft.	0-2 ft.	6-8 ft.
Sample Date:	08/19/1998	08/20/1998	08/24/1998	08/24/1998	08/20/1998	08/20/1998	08/17/1998	08/17/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 560	ND 180	ND 150 J	ND 160 J	ND 110	ND 170	ND 110	ND 150
2-Chlorophenol	ug/Kg	ND 1800	ND 600 J	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
1,3-Dichlorobenzene	ug/Kg	ND 1800	ND 600	ND 500 J	150 J	110 J	ND 580	ND 370	240 J
1,4-Dichlorobenzene	ug/Kg	ND 1800	390 J	92 J	1100 J	860	80 J	140 J	390 J
1,2-Dichlorobenzene	ug/Kg	ND 1800	170 J	79 J	750 J	2100	80 J	64 J	ND 490
2-Methylphenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
4-Methylphenol	ug/Kg	ND 1800	130 J	200 J	ND 530 J	ND 370	180 J	ND 370	81 J
N-nitroso-di-n-propylamine	ug/Kg	ND 1800	ND 600 J	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Hexachloroethane	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Nitrobenzene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Isophorone	ug/Kg	ND 1800	100 J	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2-Nitrophenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,4-Dimethylphenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Bis(2-chloroethoxy)methane	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,4-Dichlorophenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
1,2,4-Trichlorobenzene	ug/Kg	ND 1800	130 J	56 J	280 J	3100	ND 580	82 J	180 J
Naphthalene	ug/Kg	ND 1800	130 J	220 J	63 J	ND 370	220 J	ND 370	130 J
4-Chloroaniline	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Hexachlorobutadiene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
4-Chloro-3-methylphenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2-Methylnaphthalene	ug/Kg	ND 1800	88 J	120 J	ND 530 J	ND 370	1200	ND 370	ND 520
Hexachlorocyclopentadiene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,4,6-Trichlorophenol	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,4,5-Trichlorophenol	ug/Kg	ND 4500	ND 1400	ND 1200 J	ND 1300 J	ND 890	ND 1400	ND 880	ND 1200
2-Chloronaphthalene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2-Nitroaniline	ug/Kg	ND 3700	ND 1200	ND 990 J	ND 1000 J	ND 730	ND 1100	ND 720	ND 970
Dimethyl phthalate	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Acenaphthylene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,6-Dinitrotoluene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
3-Nitroaniline	ug/Kg	ND 3700	ND 1200	ND 990 J	ND 1000 J	ND 730	ND 1100	ND 720	ND 970
Acenaphthene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	94 J	ND 370	59 J
2,4-Dinitrophenol	ug/Kg	ND 3700	ND 1200 J	ND 990 J	ND 1000 J	ND 730 J	ND 1100 J	ND 720	ND 970
4-Nitrophenol	ug/Kg	ND 3700	ND 1200	ND 990 J	ND 1000 J	ND 730	ND 1100	ND 720	ND 970
Dibenzofuran	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
2,4-Dinitrotoluene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Diethyl phthalate	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (c)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-22	WB-23	WB-24	WB-25	WB-26	WB-26	WB-27	WB-27
Sample Depth:	2-4 ft.	4-6 ft.	4-6 ft.	4-6 ft.	0-2 ft.	6-8 ft.	0-2 ft.	6-8 ft.
Sample Date:	08/19/1998	08/20/1998	08/24/1998	08/24/1998	08/20/1998	08/20/1998	08/17/1998	08/17/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 1800	ND 600	53 J	ND 530 J	ND 370	120 J	ND 370	87 J
4-Chlorophenyl phenylether	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
4-Nitroaniline	ug/Kg	ND 3700	ND 1200	ND 990 J	ND 1000 J	ND 730	ND 1100	ND 720	ND 970
4,6-Dinitro-2-methylphenol	ug/Kg	ND 3700	ND 1200	ND 990 J	ND 1000 J	ND 730	ND 1100	ND 720	ND 970
N-nitrosodiphenylamine	ug/Kg	ND 1800	ND 600	60 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
4-Bromophenyl phenylether	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Pentachlorophenol	ug/Kg	ND 3700	ND 1200	ND 990 J	ND 1000 J	ND 730	ND 1100	ND 720	ND 970
Phenanthrene	ug/Kg	ND 1800	81 J	180 J	56 J	ND 370	450 J	ND 370	260 J
Anthracene	ug/Kg	ND 1800	ND 600	100 J	ND 530 J	ND 370	100 J	ND 370	54 J
Carbazole	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Di-n-butyl phthalate	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Fluoranthene	ug/Kg	ND 1800	85 J	180 J	64 J	ND 370	210 J	ND 370	130 J
Pyrene	ug/Kg	ND 1800	99 J	250 J	87 J	ND 370	310 J	ND 370	220 J
Butylbenzylphthalate	ug/Kg	ND 1800	ND 600	ND 500 J	280 J	ND 370	ND 580	49 J	ND 490
Benzo(a)anthracene	ug/Kg	ND 1800	ND 600	150 J	ND 530 J	ND 370	120 J	ND 370	94 J
3,3'-Dichlorobenzidine	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Chrysene	ug/Kg	ND 1800	69 J	170 J	58 J	ND 370	180 J	ND 370	110 J
Bis(2-ethylhexyl)phthalate	ug/Kg	300000	ND 600	ND 500 J	580 B	250 B	330 B	220 J	1300
Di-n-octyl phthalate	ug/Kg	3800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Benzo(b)fluoranthene	ug/Kg	ND 1800	ND 600	130 J	ND 530 J	ND 370	91 J	ND 370	56 J
Benzo(k)fluoranthene	ug/Kg	ND 1800	ND 600	110 J	ND 530 J	ND 370	90 J	ND 370	62 J
Benzo(a)pyrene	ug/Kg	ND 1800	ND 600	130 J	ND 530 J	ND 370	110 J	ND 370	190 J
Indeno(1,2,3-cd)pyrene	ug/Kg	ND 1800	ND 600	130 J	ND 530 J	ND 370	73 J	ND 370	52 J
Dibenz(a,h)anthracene	ug/Kg	ND 1800	ND 600	64 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Benzo(g,h,i)perylene	ug/Kg	ND 1800	ND 600	180 J	55 J	ND 370	94 J	ND 370	70 J
1,2-Diphenyl-hydrazine	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	ND 370	ND 580	ND 370	ND 490
Hexachlorobenzene	ug/Kg	ND 1800	ND 600	ND 500 J	ND 530 J	70 J	ND 580	ND 370	ND 490

TAL Metals

Aluminum	mg/Kg	7000 J	15000 J	13000 J	9100 J	6300 J	14000 J	13000	19000
Antimony	mg/Kg	R	1.7 L	1.1 L	0.73 L	R	1.2 L	0.59 L	2.7 L
Arsenic	mg/Kg	3.8 J	22 J	20 J	9.9 J	2.9 J	25 J	6.1	27
Barium	mg/Kg	39	80	68	110	310	69	72	72
Beryllium	mg/Kg	0.41	1.4	1.2	0.68	0.38	1.4	0.83	1.5
Cadmium	mg/Kg	ND 0.034	0.88	0.51	0.12	ND 0.034	0.77	0.55	1.3

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 9 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-22	WB-23	WB-24	WB-25	WB-26	WB-26	WB-27	WB-27
Sample Depth:	2-4 ft.	4-6 ft.	4-6 ft.	4-6 ft.	0-2 ft.	6-8 ft.	0-2 ft.	6-8 ft.
Sample Date:	08/19/1998	08/20/1998	08/24/1998	08/24/1998	08/20/1998	08/20/1998	08/17/1998	08/17/1998

Parameters

Units

TAL Metals (Cont'd)

Calcium	mg/Kg	880 J	2500 J	2000 J	1800 J	700 J	2700 J	1900	2800
Chromium	mg/Kg	20 J	93 J	82 J	41 J	14 J	87 J	29	90
Cobalt	mg/Kg	5.4	15	14	11	4.4	20	8.5	20
Copper	mg/Kg	8.5	74	63	24	7.0	68	18	68
Iron	mg/Kg	15000 J	34000 J	31000 J	19000 J	11000 J	33000 J	27000	35000
Lead	mg/Kg	9.9 JL	150 JL	120 JL	62 JL	14 JL	140 JL	22	150
Magnesium	mg/Kg	1400 J	5300 J	4500 J	2800 J	960 J	5500 J	1900	5900
Manganese	mg/Kg	330 J	1200 J	820 J	740 J	170 J	1300 J	630	1100
Mercury	mg/Kg	9.6 L	5.6	0.82	1.3	9.2	1.6	37 J	4.3 J
Nickel	mg/Kg	8.0 J	29 J	26 J	18 J	6.8 J	33 J	14	33
Potassium	mg/Kg	820	2500	3100	2500	530	2300	1500	3500
Selenium	mg/Kg	0.44 J	2.7 L	2.1 L	1.3 B	0.56 B	3.0 L	1.3	3.1
Silver	mg/Kg	0.33 B	1.5	1.3	0.64	0.27 B	1.4	ND 0.067	ND 0.090
Sodium	mg/Kg	230	3800	3100	3600	110	3600	1000	3300
Thallium	mg/Kg	ND 0.20	0.77	0.71	ND 0.29	0.20	1.0	ND 0.20	ND 0.27
Vanadium	mg/Kg	23 J	65 J	56 J	37 J	18 J	62 J	34	71
Zinc	mg/Kg	37 J	340 J	330 J	140 J	32 J	390 J	94	380
Methyl mercury	ug/Kg	--	--	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	--	--	--	--	--	--	--	--
Sulfide	mg/Kg	--	--	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	--	--	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	--	--	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	--	--	--	--	--	--	--	--
Medium sand (0.425 mm)	%	--	--	--	--	--	--	--	--
Fine sand (0.075 mm)	%	--	--	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	--	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	5900 K	56000 K	43000 J	43000 J	7000 K	54000 K	1900	31000 L

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 10 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-28	WB-28	WB-29	WB-29	WB-30	WB-30	WB-31	WB-31
Sample Depth:	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	2-4 ft.
Sample Date:	08/17/1998	08/17/1998	08/17/1998	08/17/1998	08/14/1998	08/14/1998	08/14/1998	08/14/1998

Parameters

Units

TCL Volatiles

Chloromethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Bromomethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Vinyl chloride	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Chloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Methylene chloride	ug/Kg	1 B	2 B	1 B	3 B	2 B	2 B	1 B	2 B
Acetone	ug/Kg	ND 11	38 B	9 B	33 B	ND 11	33 B	9 B	25 B
Carbon disulfide	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1-Dichloroethene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1-Dichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,2-Dichloroethene (total)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
2-Butanone (MEK)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	8 J	ND 11	ND 11
Chloroform	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,2-Dichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1,1-Trichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Carbon tetrachloride	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Bromodichloromethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,2-Dichloropropane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
cis-1,3-Dichloropropene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Trichloroethene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Benzene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Dibromochloromethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
trans-1,3-Dichloropropene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1,2-Trichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Bromoform	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
2-Hexanone	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Tetrachloroethene	ug/Kg	7 B	5 B	8 B	8 B	10 B	10 B	5 B	8 B
1,1,2,2-Tetrachloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Toluene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Chlorobenzene	ug/Kg	ND 11	4 J	1 J	3 J	ND 11	3 J	ND 11	4 J
Ethylbenzene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Styrene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Xylenes (total)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11

TCL Semi-volatiles

Phenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
--------	-------	--------	--------	--------	--------	--------	--------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 10 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-28	WB-28	WB-29	WB-29	WB-30	WB-30	WB-31	WB-31
Sample Depth:	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	2-4 ft.
Sample Date:	08/17/1998	08/17/1998	08/17/1998	08/17/1998	08/14/1998	08/14/1998	08/14/1998	08/14/1998

Parameters Units

TCL Volatiles

Chloromethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Bromomethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Vinyl chloride	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Chloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Methylene chloride	ug/Kg	1 B	2 B	1 B	3 B	2 B	2 B	1 B	2 B
Acetone	ug/Kg	ND 11	38 B	9 B	33 B	ND 11	33 B	9 B	25 B
Carbon disulfide	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1-Dichloroethene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1-Dichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,2-Dichloroethene (total)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
2-Butanone (MEK)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	8 J	ND 11	ND 11
Chloroform	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,2-Dichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1,1-Trichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Carbon tetrachloride	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Bromodichloromethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,2-Dichloropropane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
cis-1,3-Dichloropropene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Trichloroethene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Benzene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Dibromochloromethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
trans-1,3-Dichloropropene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
1,1,2-Trichloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Bromoform	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
2-Hexanone	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Tetrachloroethene	ug/Kg	7 B	5 B	8 B	8 B	10 B	10 B	5 B	8 B
1,1,2,2-Tetrachloroethane	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Toluene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Chlorobenzene	ug/Kg	ND 11	4 J	1 J	3 J	ND 11	3 J	ND 11	4 J
Ethylbenzene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Styrene	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11
Xylenes (total)	ug/Kg	ND 11	ND 17	ND 11	ND 13	ND 11	ND 12	ND 11	ND 11

TCL Semi-volatiles

Phenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
--------	-------	--------	--------	--------	--------	--------	--------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 10 (b)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-28	WB-28	WB-29	WB-29	WB-30	WB-30	WB-31	WB-31
Sample Depth:	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	2-4 ft.
Sample Date:	08/17/1998	08/17/1998	08/17/1998	08/17/1998	08/14/1998	08/14/1998	08/14/1998	08/14/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 110	ND 170	ND 110	ND 130	ND 110	ND 120	ND 110	ND 110
2-Chlorophenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
1,3-Dichlorobenzene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	57 J
1,4-Dichlorobenzene	ug/Kg	87 J	110 J	61 J	79 J	ND 370	ND 390	110 J	260 J
1,2-Dichlorobenzene	ug/Kg	140 J	ND 560	73 J	ND 430	ND 370	ND 390	90 J	160 J
2-Methylphenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
4-Methylphenol	ug/Kg	ND 360	94 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
N-nitroso-di-n-propylamine	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Hexachloroethane	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Nitrobenzene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Isophorone	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2-Nitrophenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,4-Dimethylphenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Bis(2-chloroethoxy)methane	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,4-Dichlorophenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
1,2,4-Trichlorobenzene	ug/Kg	230 J	120 J	80 J	ND 430	ND 370	ND 390	110 J	170 J
Naphthalene	ug/Kg	ND 360	110 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
4-Chloroaniline	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Hexachlorobutadiene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
4-Chloro-3-methylphenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2-Methylnaphthalene	ug/Kg	ND 360	62 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Hexachlorocyclopentadiene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,4,6-Trichlorophenol	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,4,5-Trichlorophenol	ug/Kg	ND 870	ND 1400	ND 870	ND 1000	ND 880	ND 940	ND 900	ND 910
2-Chloronaphthalene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2-Nitroaniline	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
Dimethyl phthalate	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Acenaphthylene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,6-Dinitrotoluene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
3-Nitroaniline	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
Acenaphthene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,4-Dinitrophenol	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
4-Nitrophenol	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
Dibenzofuran	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
2,4-Dinitrotoluene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Diethyl phthalate	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 10 (c)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-28	WB-28	WB-29	WB-29	WB-30	WB-30	WB-31	WB-31
Sample Depth:	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	2-4 ft.
Sample Date:	08/17/1998	08/17/1998	08/17/1998	08/17/1998	08/14/1998	08/14/1998	08/14/1998	08/14/1998

Parameters Units

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
4-Chlorophenyl phenylether	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
4-Nitroaniline	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
4,6-Dinitro-2-methylphenol	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
N-nitrosodiphenylamine	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
4-Bromophenyl phenylether	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Pentachlorophenol	ug/Kg	ND 710	ND 1100	ND 720	ND 850	ND 720	ND 770	ND 730	ND 750
Phenanthrene	ug/Kg	40 J	100 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Anthracene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Carbazole	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Di-n-butyl phthalate	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Fluoranthene	ug/Kg	68 J	96 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Pyrene	ug/Kg	78 J	130 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Burylbenzylphthalate	ug/Kg	260 J	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Benzo(a)anthracene	ug/Kg	47 J	74 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
3,3'-Dichlorobenzidine	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Chrysene	ug/Kg	56 J	100 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Bis(2-ethylhexyl)phthalate	ug/Kg	ND 360	420 J	150 J	ND 430	ND 370	170 J	160 J	240 J
Di-n-octyl phthalate	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Benzo(b)fluoranthene	ug/Kg	65 J	82 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Benzo(k)fluoranthene	ug/Kg	46 J	71 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Benzo(a)pyrene	ug/Kg	49 J	330 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Indeno(1,2,3-cd)pyrene	ug/Kg	39 J	71 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Dibenz(a,h)anthracene	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Benzo(g,h,i)perylene	ug/Kg	43 J	99 J	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
1,2-Diphenyl-hydrazine	ug/Kg	ND 360	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380
Hexachlorobenzene	ug/Kg	59 J	ND 560	ND 360	ND 430	ND 370	ND 390	ND 370	ND 380

TAL Metals

Aluminum	mg/Kg	12000	23000	11000	12000	11000	13000	14000	14000
Antimony	mg/Kg	0.61 L	2.3 L	0.38 L	0.57 L	0.42 L	0.54 L	0.54 L	0.79 L
Arsenic	mg/Kg	3.9	19	3.2	7.9	2.4	3.9	5.0	3.9
Barium	mg/Kg	64	73	61	43	33	37	60	76
Beryllium	mg/Kg	0.62	1.4	0.57	0.70	0.39	0.58	0.57	0.55
Cadmium	mg/Kg	0.21	1.1	0.21	0.45	0.15	0.23	0.30	0.29

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 10 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-28	WB-28	WB-29	WB-29	WB-30	WB-30	WB-31	WB-31
Sample Depth:	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	4-6 ft.	0-2 ft.	2-4 ft.
Sample Date:	08/17/1998	08/17/1998	08/17/1998	08/17/1998	08/14/1998	08/14/1998	08/14/1998	08/14/1998

Parameters

Units

TAL Metals (Cont'd)

Calcium	mg/Kg	490	3900	720	2400	740	520	880	940
Chromium	mg/Kg	18	87	16	38	14	23	24	24
Cobalt	mg/Kg	6.4	21	5.6	11	3.7	4.8	7.0	7.0
Copper	mg/Kg	9.4	43	9.0	13	5.3	11	9.2	10
Iron	mg/Kg	17000	37000	13000	22000	8800	9200	17000	16000
Lead	mg/Kg	17	110	11	20	7.4	25	14	14
Magnesium	mg/Kg	1400	7800	870	4300	740	1400	1700	1700
Manganese	mg/Kg	130	1200	99	580	66	210	220	190
Mercury	mg/Kg	1.8 J	12 J	3.2 J	2.5 J	1.1 J	2.3 J	4.7 J	7.8 J
Nickel	mg/Kg	9.0	36	7.9	18	5.5	8.7	11	10
Potassium	mg/Kg	760	5600	800	2500	440	1000	1000	1400
Selenium	mg/Kg	0.80 K	2.8	0.48 K	0.97 K	ND 0.22	0.73 K	0.69 K	0.89 K
Silver	mg/Kg	ND 0.066	ND 0.10	ND 0.066	ND 0.079	ND 0.067	ND 0.071	ND 0.068	ND 0.069
Sodium	mg/Kg	160	2100	43	370	80	850	760	920
Thallium	mg/Kg	ND 0.19	ND 0.30	ND 0.20	ND 0.23	ND 0.20	ND 0.21	ND 0.20	ND 0.20
Vanadium	mg/Kg	29	76	24	31	20	28	33	33
Zinc	mg/Kg	36	260	37	100	17	50	39	39
Methyl mercury	ug/Kg	--	--	--	--	--	--	--	--

General Chemistry

Ammonia	mg/Kg	--	--	--	--	--	--	--	--
Sulfide	mg/Kg	--	--	--	--	--	--	--	--
Coarse gravel (19.0 mm)	%	--	--	--	--	--	--	--	--
Fine gravel (4.75 mm)	%	--	--	--	--	--	--	--	--
Coarse sand (2.00 mm)	%	--	--	--	--	--	--	--	--
Medium sand (0.425 mm)	%	--	--	--	--	--	--	--	--
Fine sand (0.075 mm)	%	--	--	--	--	--	--	--	--
Silts/clays (<0.075 mm)	%	--	--	--	--	--	--	--	--
Total organic carbon (TOC)	mg/Kg	3800 L	28000 L	2600 L	13000 L	4900 L	4600 L	5900 L	5400 L

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 11 (a)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-32	WB-32
Sample Depth:	0-2 ft.	4-6 ft.
Sample Date:	08/17/1998	08/17/1998

Parameters	Units
------------	-------

TCL Volatiles

Chloromethane	ug/Kg	ND 11	ND 17
Bromomethane	ug/Kg	ND 11	ND 17
Vinyl chloride	ug/Kg	ND 11	ND 17
Chloroethane	ug/Kg	ND 11	ND 17
Methylene chloride	ug/Kg	2 B	2 B
Acetone	ug/Kg	ND 11	37 B
Carbon disulfide	ug/Kg	ND 11	ND 17
1,1-Dichloroethene	ug/Kg	ND 11	ND 17
1,1-Dichloroethane	ug/Kg	ND 11	ND 17
1,2-Dichloroethene (total)	ug/Kg	ND 11	ND 17
2-Butanone (MEK)	ug/Kg	ND 11	ND 17
Chloroform	ug/Kg	ND 11	ND 17
1,2-Dichloroethane	ug/Kg	ND 11	ND 17
1,1,1-Trichloroethane	ug/Kg	ND 11	ND 17
Carbon tetrachloride	ug/Kg	ND 11	ND 17
Bromodichloromethane	ug/Kg	ND 11	ND 17
1,2-Dichloropropane	ug/Kg	ND 11	ND 17
cis-1,3-Dichloropropene	ug/Kg	ND 11	ND 17
Trichloroethene	ug/Kg	ND 11	ND 17
Benzene	ug/Kg	ND 11	ND 17
Dibromochloromethane	ug/Kg	ND 11	ND 17
trans-1,3-Dichloropropene	ug/Kg	ND 11	ND 17
1,1,2-Trichloroethane	ug/Kg	ND 11	ND 17
Bromoform	ug/Kg	ND 11	ND 17
4-Methyl-2-pentanone (MIBK)	ug/Kg	ND 11	ND 17
2-Hexanone	ug/Kg	ND 11	ND 17
Tetrachloroethene	ug/Kg	7 B	7 B
1,1,2,2-Tetrachloroethane	ug/Kg	ND 11	ND 17
Toluene	ug/Kg	ND 11	ND 17
Chlorobenzene	ug/Kg	ND 11	10 J
Ethylbenzene	ug/Kg	ND 11	ND 17
Styrene	ug/Kg	ND 11	ND 17
Xylenes (total)	ug/Kg	ND 11	ND 17

TCL Semi-volatiles

Phenol	ug/Kg	ND 350	ND 560
--------	-------	--------	--------

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 11 (b)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-32	WB-32
Sample Depth:	0-2 ft.	4-6 ft.
Sample Date:	08/17/1998	08/17/1998

Parameters	Units
------------	-------

TCL Semi-volatiles (Cont'd)

Bis(2-chloroethyl)ether	ug/Kg	ND 110	ND 170
2-Chlorophenol	ug/Kg	ND 350	ND 560
1,3-Dichlorobenzene	ug/Kg	ND 350	87 J
1,4-Dichlorobenzene	ug/Kg	ND 350	430 J
1,2-Dichlorobenzene	ug/Kg	ND 350	ND 560
2-Methylphenol	ug/Kg	ND 350	ND 560
2,2'-Oxybis(1-chloropropane)	ug/Kg	ND 350	ND 560
4-Methylphenol	ug/Kg	ND 350	74 J
N-nitroso-di-n-propylamine	ug/Kg	ND 350	ND 560
Hexachloroethane	ug/Kg	ND 350	ND 560
Nitrobenzene	ug/Kg	ND 350	ND 560
Isophorone	ug/Kg	ND 350	ND 560
2-Nitrophenol	ug/Kg	ND 350	ND 560
2,4-Dimethylphenol	ug/Kg	ND 350	ND 560
Bis(2-chloroethoxy)methane	ug/Kg	ND 350	ND 560
2,4-Dichlorophenol	ug/Kg	ND 350	ND 560
1,2,4-Trichlorobenzene	ug/Kg	ND 350	ND 560
Naphthalene	ug/Kg	ND 350	91 J
4-Chloroaniline	ug/Kg	ND 350	ND 560
Hexachlorobutadiene	ug/Kg	ND 350	ND 560
4-Chloro-3-methylphenol	ug/Kg	ND 350	ND 560
2-Methylnaphthalene	ug/Kg	ND 350	ND 560
Hexachlorocyclopentadiene	ug/Kg	ND 350	ND 560
2,4,6-Trichlorophenol	ug/Kg	ND 350	ND 560
2,4,5-Trichlorophenol	ug/Kg	ND 850	ND 1300
2-Chloronaphthalene	ug/Kg	ND 350	ND 560
2-Nitroaniline	ug/Kg	ND 700	ND 1100
Dimethyl phthalate	ug/Kg	ND 350	ND 560
Acenaphthylene	ug/Kg	ND 350	ND 560
2,6-Dinitrotoluene	ug/Kg	ND 350	ND 560
3-Nitroaniline	ug/Kg	ND 700	ND 1100
Acenaphthene	ug/Kg	ND 350	ND 560
2,4-Dinitrophenol	ug/Kg	ND 700	ND 1100
4-Nitrophenol	ug/Kg	ND 700	ND 1100
Dibenzofuran	ug/Kg	ND 350	ND 560
2,4-Dinitrotoluene	ug/Kg	ND 350	ND 560
Diethyl phthalate	ug/Kg	ND 350	ND 560

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 11 (c)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-32	WB-32
Sample Depth:	0-2 ft.	4-6 ft.
Sample Date:	08/17/1998	08/17/1998

Parameters	Units
------------	-------

TCL Semi-volatiles (Cont'd)

Fluorene	ug/Kg	ND 350	ND 560
4-Chlorophenyl phenylether	ug/Kg	ND 350	ND 560
4-Nitroaniline	ug/Kg	ND 700	ND 1100
4,6-Dinitro-2-methylphenol	ug/Kg	ND 700	ND 1100
N-nitrosodiphenylamine	ug/Kg	ND 350	ND 560
4-Bromophenyl phenylether	ug/Kg	ND 350	ND 560
Pentachlorophenol	ug/Kg	ND 700	ND 1100
Phenanthrene	ug/Kg	79 J	84 J
Anthracene	ug/Kg	ND 350	ND 560
Carbazole	ug/Kg	ND 350	ND 560
Di-n-butyl phthalate	ug/Kg	ND 350	ND 560
Fluoranthene	ug/Kg	90 J	110 J
Pyrene	ug/Kg	110 J	120 J
Butylbenzylphthalate	ug/Kg	ND 350	ND 560
Benzo(a)anthracene	ug/Kg	57 J	75 J
3,3'-Dichlorobenzidine	ug/Kg	ND 350	ND 560
Chrysene	ug/Kg	59 J	78 J
Bis(2-ethylhexyl)phthalate	ug/Kg	280 J	400 J
Di-n-octyl phthalate	ug/Kg	ND 350	ND 560
Benzo(b)fluoranthene	ug/Kg	ND 350	64 J
Benzo(k)fluoranthene	ug/Kg	ND 350	67 J
Benzo(a)pyrene	ug/Kg	48 J	160 J
Indeno(1,2,3-cd)pyrene	ug/Kg	45 J	72 J
Dibenz(a,h)anthracene	ug/Kg	ND 350	ND 560
Benzo(g,h,i)perylene	ug/Kg	62 J	87 J
1,2-Diphenyl-hydrazine	ug/Kg	ND 350	ND 560
Hexachlorobenzene	ug/Kg	620	ND 560

TAL Metals

Aluminum	mg/Kg	9100	21000
Antimony	mg/Kg	0.59 L	2.0 L
Arsenic	mg/Kg	1.7 K	21
Barium	mg/Kg	410	100
Beryllium	mg/Kg	0.50	1.2
Cadmium	mg/Kg	0.29	1.3

TABLE 3B
ANALYTICAL RESULTS SUMMARY - SOIL/SEDIMENT SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 11 (d)
Date Printed: May 12, 1999
Time Printed: 2:18 pm

Sample Location:	WB-32	WB-32
Sample Depth:	0-2 ft.	4-6 ft.
Sample Date:	08/17/1998	08/17/1998

Parameters	Units
------------	-------

TAL Metals (Cont'd)

Calcium	mg/Kg	4000	3000
Chromium	mg/Kg	14	78
Cobalt	mg/Kg	3.6	19
Copper	mg/Kg	18	48
Iron	mg/Kg	9300	34000
Lead	mg/Kg	19	88
Magnesium	mg/Kg	1400	6000
Manganese	mg/Kg	100	980
Mercury	mg/Kg	34 J	17 J
Nickel	mg/Kg	10	31
Potassium	mg/Kg	710	5400
Selenium	mg/Kg	0.55 K	2.5
Silver	mg/Kg	ND 0.065	ND 0.10
Sodium	mg/Kg	340	5700
Thallium	mg/Kg	ND 0.19	ND 0.30
Vanadium	mg/Kg	18	64
Zinc	mg/Kg	150	290
Methyl mercury	ug/Kg	--	--

General Chemistry

Ammonia	mg/Kg	--	--
Sulfide	mg/Kg	--	--
Coarse gravel (19.0 mm)	%	--	--
Fine gravel (4.75 mm)	%	--	--
Coarse sand (2.00 mm)	%	--	--
Medium sand (0.425 mm)	%	--	--
Fine sand (0.075 mm)	%	--	--
Silts/clays (<0.075 mm)	%	--	--
Total organic carbon (TOC)	mg/Kg	6000 L	33000 L

Notes

NDx	- Not detected at or above x.
J	- Estimated.
Dupl.	- Field duplicate.
R	- Rejected.
K	- Value is estimated indicating a potential high bias.
L	- Value is estimated indicating a potential low bias.
B	- Analyte was present in an associated blank, indicating probable contamination.
--	- Not applicable.

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (a)
Date Printed: May 12, 1999
Time Printed: 2:19 pm

Sample Location:

Parameters

Units

PZ-2

PZ-2

Dupl.

PZ-3

PZ-4

PZ-5

PZ-6

PZ-7

PZ-8

TCL Volatiles

Chloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromomethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Vinyl chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Methylene chloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acetone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon disulfide	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Butanone (MEK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chloroform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,1-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbon tetrachloride	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromodichloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichloropropane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Trichloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Dibromochloromethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2-Trichloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bromoform	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Hexanone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Tetrachloroethene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Toluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Ethylbenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Styrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Xylenes (total)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TCL Semi-volatiles

Phenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
2-Chlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,3-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (b)
Date Printed: May 12, 1999
Time Printed: 2:19 pm

Sample Location:

Parameters

Units

PZ-2

Dupl.

PZ-2

PZ-3

PZ-4

PZ-5

PZ-6

PZ-7

PZ-8

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Dichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	11	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachloroethane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Nitrobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Isophorone	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitrophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dimethylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Naphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloroaniline	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorobutadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Methylnaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
2-Chloronaphthalene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dimethyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Acenaphthylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,6-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Acenaphthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4-Nitrophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Dibenzofuran	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
2,4-Dinitrotoluene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Diethyl phthalate	ug/L	2 J	2 J	ND 10	2 J	3 J	ND 10	ND 10	ND 10
Fluorene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Nitroaniline	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
N-nitrosodiphenylamine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
4-Bromophenyl phenylether	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (c)
Date Printed: May 12, 1999
Time Printed: 2:20 pm

Sample Location:		PZ-2	PZ-2	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	PZ-8
			Dupl.						
<u>Parameters</u>	<u>Units</u>								
<u>TCL Semi-volatiles (Cont'd)</u>									
Pentachlorophenol	ug/L	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25	ND 25
Phenanthrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Carbazole	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Di-n-butyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Butylbenzylphthalate	ug/L	ND 10	ND 10	ND 10	1 J	ND 10	ND 10	2 J	ND 10
Benzo(a)anthracene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Chrysene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	2 J	4 J	3 J	6 J	3 J	3 J	16	1 J
Di-n-octyl phthalate	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	1 J	ND 10	ND 10
Benzo(b)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(k)fluoranthene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Benzo(a)pyrene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1	ND 1
Hexachlorobenzene	ug/L	ND 0.025	ND 0.025	ND 0.025	ND 0.025	ND 0.025 J	ND 0.025	ND 0.025 J	ND 0.025
<u>TAL Metals</u>									
Aluminum	ug/L	450 J	410 J	29000 J	3000 J	1700 J	17000 J	43000 J	110000 J
Aluminum, dissolved	ug/L	ND 6.5	ND 6.5	ND 6.5	ND 6.5	48	ND 6.5	ND 6.5	ND 6.5
Antimony	ug/L	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9
Antimony, dissolved	ug/L	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9	ND 2.9
Arsenic	ug/L	3.3	ND 2.4	17	4.4	2.6	37	22	87
Arsenic, dissolved	ug/L	3.9	ND 2.4	2.5	ND 2.4	ND 2.4	7.9	2.7	16
Barium	ug/L	340 J	340 J	900 J	300 J	71 J	520 J	1400 J	1200 J
Barium, dissolved	ug/L	280	290	230	250	27	130	260	47
Beryllium	ug/L	0.32	0.34	8.7	0.82	0.48	4.9	16	5.5
Beryllium, dissolved	ug/L	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30	ND 0.30
Cadmium, dissolved	ug/L	ND 0.50	ND 0.50	ND 0.50	ND 0.50	ND 0.50	ND 0.50	ND 0.50	ND 0.50
Calcium	ug/L	45000 J	42000 J	61000 J	52000 J	56000 J	92000 J	78000 J	50000 J
Calcium, dissolved	ug/L	42000 J	43000 J	60000 J	48000 J	59000 J	77000 J	71000 J	23000 J
Chromium	ug/L	2.0 J	2.1 J	180 J	8.4 J	6.5 J	81 J	220 J	380 J
Chromium, dissolved	ug/L	ND 0.90	ND 0.90	1.3	ND 0.90	1.6	3.3	1.2	ND 0.90

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 1 (d)
Date Printed: May 12, 1999
Time Printed: 2:20 pm

Sample Location:

Parameters

Units

TAL Metals (Cont'd)

		PZ-2	PZ-2 Dupl.	PZ-3	PZ-4	PZ-5	PZ-6	PZ-7	PZ-8
Cobalt	ug/L	ND 3.6	ND 3.6	31	7.9	ND 3.6	36	120	41
Cobalt, dissolved	ug/L	ND 3.6	ND 3.6	ND 3.6	5.5	ND 3.6	7.1	8.0	ND 3.6
Copper	ug/L	ND 2.2	ND 2.2	16	8.9	2.6	37	ND 2.2	ND 2.2
Copper, dissolved	ug/L	2.2	ND 2.2	ND 2.2	ND 2.2	ND 2.2	ND 2.2	ND 2.2	ND 2.2
Iron	ug/L	17000 J	18000 J	180000 J	78000 J	18000 J	140000 J	430000 J	43000 J
Iron, dissolved	ug/L	15000	16000	77000	55000	12000	29000	59000	72
Lead	ug/L	2.2 J	2.1 J	200 J	20 J	6.3 J	250 J	120 J	24 J
Lead, dissolved	ug/L	1.6	1.8	5.1	3.3	ND 1.0	2.0	3.6	1.1
Magnesium	ug/L	85000 J	80000 J	100000 J	81000 J	110000 J	140000 J	100000 J	220000 J
Magnesium, dissolved	ug/L	79000	79000	100000	76000	110000	140000	110000	17000
Manganese	ug/L	4400 J	4200 J	7200 J	4500 J	2900 J	5800 J	8000 J	19000 J
Manganese, dissolved	ug/L	4100	4200	6900	4100	3100	1500	2000	270
Mercury	ug/L	0.45 J	0.29 J	6.6	0.50	0.40	26	360	30000
Mercury, dissolved	ug/L	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10	0.89
Nickel	ug/L	ND 3.2	ND 3.2	59	10	4.6	58	110	56
Nickel, dissolved	ug/L	ND 3.2	ND 3.2	ND 3.2	5.5	ND 3.2	ND 3.2	3.7	ND 3.2
Potassium	ug/L	16000 J	14000 J	15000 J	21000 J	19000 J	42000 J	36000 J	73000 J
Potassium, dissolved	ug/L	16000 J	15000 J	12000 J	21000 J	18000 J	41000 J	35000 J	120000 J
Selenium	ug/L	2.0 K	ND 1.9	4.7 K	3.2 K	3.1 K	5.7 K	12	8.5 K
Selenium, dissolved	ug/L	2.8 K	ND 1.9	4.9 K	2.5 K	ND 1.9	2.3 K	3.1 K	2.8 K
Silver	ug/L	1.8 B	1.9 B	2.1 B	1.7 B	1.5 B	2.0 B	2.9 B	2.8 B
Silver, dissolved	ug/L	1.8 B	1.5 B	2.1 B	2.5 B	1.4 B	1.7 B	1.4 B	0.91 B
Sodium	ug/L	360000 J	340000 J	420000 J	460000 J	540000 J	560000 J	460000 J	530000 J
Sodium, dissolved	ug/L	340000	330000	420000	440000	570000	530000	490000	590000
Thallium	ug/L	ND 1.2	ND 1.2	2.2 K	ND 1.2	1.7 K	ND 1.2	5.5 K	ND 1.2
Thallium, dissolved	ug/L	ND 1.2	ND 1.2	1.9 K	1.6 K	ND 1.2	1.2 K	ND 1.2	1.8 K
Vanadium	ug/L	3.2 J	3.0 J	270 J	15 J	8.3 J	180 J	230 J	150 J
Vanadium, dissolved	ug/L	ND 1.9	ND 1.9	2.3	ND 1.9	2.0	3.3	ND 1.9	7.1
Zinc	ug/L	24 JK	17 JK	990 J	100 J	44 J	1300 J	6000 J	300 J
Zinc, dissolved	ug/L	20 JK	13 JK	24 K	29 K	24 K	26 K	30 K	14 K

General Chemistry

Chloride	mg/L	840	880	980	960	1100	1000	1100	870
Sulfate	mg/L	1.4	1.7	2.2	2.2	3.6	12	3.8	48
Total suspended solids	mg/L	3600 J	700 J	310	29000	4600	49000	1600	810

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (a)
Date Printed: May 12, 1999
Time Printed: 2:20 pm

Sample Location:

PZ-9

Parameters

Units

TCL Volatiles

Chloromethane	ug/L	ND 10
Bromomethane	ug/L	ND 10
Vinyl chloride	ug/L	ND 10
Chloroethane	ug/L	ND 10
Methylene chloride	ug/L	ND 10
Acetone	ug/L	ND 10
Carbon disulfide	ug/L	ND 10
1,1-Dichloroethene	ug/L	ND 10
1,1-Dichloroethane	ug/L	ND 10
1,2-Dichloroethene (total)	ug/L	ND 10
2-Butanone (MEK)	ug/L	ND 10
Chloroform	ug/L	ND 10
1,2-Dichloroethane	ug/L	ND 10
1,1,1-Trichloroethane	ug/L	ND 10
Carbon tetrachloride	ug/L	ND 10
Bromodichloromethane	ug/L	ND 10
1,2-Dichloropropane	ug/L	ND 10
cis-1,3-Dichloropropene	ug/L	ND 10
Trichloroethene	ug/L	ND 10
Benzene	ug/L	ND 10
Dibromochloromethane	ug/L	ND 10
trans-1,3-Dichloropropene	ug/L	ND 10
1,1,2-Trichloroethane	ug/L	ND 10
Bromoform	ug/L	ND 10
4-Methyl-2-pentanone (MIBK)	ug/L	ND 10
2-Hexanone	ug/L	ND 10
Tetrachloroethene	ug/L	ND 10
1,1,2,2-Tetrachloroethane	ug/L	ND 10
Toluene	ug/L	ND 10
Chlorobenzene	ug/L	ND 10
Ethylbenzene	ug/L	ND 10
Styrene	ug/L	ND 10
Xylenes (total)	ug/L	ND 10

TCL Semi-volatiles

Phenol	ug/L	ND 10
Bis(2-chloroethyl)ether	ug/L	ND 1
2-Chlorophenol	ug/L	ND 10
1,3-Dichlorobenzene	ug/L	ND 10

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (b)
Date Printed: May 12, 1999
Time Printed: 2:20 pm

Sample Location:

PZ-9

Parameters

Units

TCL Semi-volatiles (Cont'd)

1,4-Dichlorobenzene	ug/L	ND 10
1,2-Dichlorobenzene	ug/L	ND 10
2-Methylphenol	ug/L	ND 10
2,2'-Oxybis(1-chloropropane)	ug/L	ND 10
4-Methylphenol	ug/L	ND 10
N-nitroso-di-n-propylamine	ug/L	ND 10
Hexachloroethane	ug/L	ND 10
Nitrobenzene	ug/L	ND 10
Isophorone	ug/L	ND 10
2-Nitrophenol	ug/L	ND 10
2,4-Dimethylphenol	ug/L	ND 10
Bis(2-chloroethoxy)methane	ug/L	ND 10
2,4-Dichlorophenol	ug/L	ND 10
1,2,4-Trichlorobenzene	ug/L	ND 10
Naphthalene	ug/L	ND 10
4-Chloroaniline	ug/L	ND 10
Hexachlorobutadiene	ug/L	ND 10
4-Chloro-3-methylphenol	ug/L	ND 10
2-Methylnaphthalene	ug/L	ND 10
Hexachlorocyclopentadiene	ug/L	ND 10
2,4,6-Trichlorophenol	ug/L	ND 10
2,4,5-Trichlorophenol	ug/L	ND 25
2-Chloronaphthalene	ug/L	ND 10
2-Nitroaniline	ug/L	ND 25
Dimethyl phthalate	ug/L	ND 10
Acenaphthylene	ug/L	ND 10
2,6-Dinitrotoluene	ug/L	ND 10
3-Nitroaniline	ug/L	ND 25
Acenaphthene	ug/L	ND 10
2,4-Dinitrophenol	ug/L	ND 25
4-Nitrophenol	ug/L	ND 25
Dibenzofuran	ug/L	ND 10
2,4-Dinitrotoluene	ug/L	ND 10
Diethyl phthalate	ug/L	ND 10
Fluorene	ug/L	ND 10
4-Chlorophenyl phenylether	ug/L	ND 10
4-Nitroaniline	ug/L	ND 25
4,6-Dinitro-2-methylphenol	ug/L	ND 25
N-nitrosodiphenylamine	ug/L	ND 10
4-Bromophenyl phenylether	ug/L	ND 10

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (c)
Date Printed: May 12, 1999
Time Printed: 2:20 pm

Sample Location:

PZ-9

Parameters

Units

TCL Semi-volatiles (Cont'd)

Pentachlorophenol	ug/L	ND 25
Phenanthrene	ug/L	ND 10
Anthracene	ug/L	ND 10
Carbazole	ug/L	ND 10
Di-n-butyl phthalate	ug/L	ND 10
Fluoranthene	ug/L	ND 10
Pyrene	ug/L	ND 10
Butylbenzylphthalate	ug/L	ND 10
Benzo(a)anthracene	ug/L	ND 10
3,3'-Dichlorobenzidine	ug/L	ND 10
Chrysene	ug/L	ND 10
Bis(2-ethylhexyl)phthalate	ug/L	11
Di-n-octyl phthalate	ug/L	ND 10
Benzo(b)fluoranthene	ug/L	ND 10
Benzo(k)fluoranthene	ug/L	ND 10
Benzo(a)pyrene	ug/L	ND 10
Indeno(1,2,3-cd)pyrene	ug/L	ND 1
Dibenz(a,h)anthracene	ug/L	ND 1
Benzo(g,h,i)perylene	ug/L	ND 10
1,2-Diphenyl-hydrazine	ug/L	ND 1
Hexachlorobenzene	ug/L	ND 0.025

TAL Metals

Aluminum	ug/L	7400 J
Aluminum, dissolved	ug/L	ND 6.5
Antimony	ug/L	ND 2.9
Antimony, dissolved	ug/L	ND 2.9
Arsenic	ug/L	6.8
Arsenic, dissolved	ug/L	ND 2.4
Barium	ug/L	110 J
Barium, dissolved	ug/L	23
Beryllium	ug/L	1.5
Beryllium, dissolved	ug/L	0.32
Cadmium, dissolved	ug/L	ND 0.50
Calcium	ug/L	53000 J
Calcium, dissolved	ug/L	49000 J
Chromium	ug/L	32 J
Chromium, dissolved	ug/L	1.1

TABLE 3C
ANALYTICAL RESULTS SUMMARY - PIEZOMETER SAMPLES
PHASE II - RCRA FACILITY INVESTIGATION
OCCIDENTAL CHEMICAL CORPORATION
DELAWARE CITY, DELAWARE
AUGUST 1998 - APRIL 1999

Page 2 (d)
Date Printed: May 12, 1999
Time Printed: 2:20 pm

Sample Location:

PZ-9

Parameters

Units

TAL Metals (Cont'd)

Cobalt	ug/L	6.8
Cobalt, dissolved	ug/L	ND 3.6
Copper	ug/L	7.6
Copper, dissolved	ug/L	ND 2.2
Iron	ug/L	14000 J
Iron, dissolved	ug/L	1300
Lead	ug/L	18 J
Lead, dissolved	ug/L	ND 1.0
Magnesium	ug/L	110000 J
Magnesium, dissolved	ug/L	110000
Manganese	ug/L	2600 J
Manganese, dissolved	ug/L	2200
Mercury	ug/L	4.4
Mercury, dissolved	ug/L	ND 0.10
Nickel	ug/L	27
Nickel, dissolved	ug/L	ND 3.2
Potassium	ug/L	27000 J
Potassium, dissolved	ug/L	24000 J
Selenium	ug/L	2.5 K
Selenium, dissolved	ug/L	ND 1.9
Silver	ug/L	1.6 B
Silver, dissolved	ug/L	1.9 B
Sodium	ug/L	740000 J
Sodium, dissolved	ug/L	720000
Thallium	ug/L	1.5 K
Thallium, dissolved	ug/L	1.4 K
Vanadium	ug/L	49 J
Vanadium, dissolved	ug/L	3.9
Zinc	ug/L	170 J
Zinc, dissolved	ug/L	14 K

General Chemistry

Chloride	mg/L	1400
Sulfate	mg/L	3.4
Total suspended solids	mg/L	890

Notes

- NDx - Not detected at or above x.
- J - Estimated.
- Dupl. - Field duplicate.
- K - Value is estimated indicating a potential high bias.
- B - Analyte was present in an associated blank, indicating probable contamination.